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CRITICAL TREATMENT PROBLEMS IN TODAY'S SYPHILOLOGY *

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I have selected four topics for this presentation from a field of almost unlimited possibilities. As is my custom, knowing my failings, I apologize at the outset for a certain schoolmasterly didacticism of presentation, which is of the word only, and not inspired by ignorance of the possibilities of error in dogmatic statement. I should like to stimulate thought and create a discussion rather than make final pronouncements on current problems. I shall accordingly consider recent developments in the control of infectiousness by organized and socialized treatment, which is, in essence, the management of early syphilis; the problem of bismuth; the prevention and control of the two most threatening aspects of late syphilis, disease of the heart and of the nervous system; and smoother treatment.

THE CONTROL OF SYPHILIS BY TREATMENT OF THE INFECTIOUS

One of the disservices which medicine, as taught even today, performs for its votaries and its beneficiaries is the inculcation of a therapeutic as distinguished from a preventive point of view. Beset by the question of what to do for those already sick, nothing is more difficult than to become absorbed in prevention, if one is a practicing physician. Prevention seems to be allocated too often to a group or class who do this special aspect of our thinking for us. The preventionists are the health officers, a group of medical men with a strange, almost a battling light in the eye, a heavy heel to the boot, a heavy hand on the shoulder and the door; who, as perhaps is inevitable with guardians, sometimes develop a little of a police reaction toward the protection of the public health and the prevention of disease. I have been an interested observer of this group of men and generously received among them for a number of years, now, and I admire and respect them to the core. In them lives the spirit of the crusades, tempered by a humanitarianism to which the knights of old were still strangers. From them, as the Apocrypha has it, "is peace upon the face of the earth."

In no direction, if one will but look about, have more recent or more important lessons come in the field of syphilotherapy than from its health officers. They are the apostles of the extinction of syphilis by treatment; and in parts of the world where they are being given controlling influence they are apparently accomplishing that beneficent end. They are the advance guard of a new social medicine, which we of the ancient fraternity of medical individualists (and I am one of them) must meet and know, and with whom we must work in a preventive way for the extinction of disease as distinguished from its cure. By applying organization to the management of syphilis, the health officer is apparently showing that what is needed for a campaign against this disease is less new discoveries and new drugs than more effective application of old ones. He is putting the nation in which, like our own, treatment is in the hands of the general practitioner on the back shelf, and is bringing to the front the nations in which the treatment of venereal disease has passed into the hands of the state.

Writing as long ago as the last year of the war, as a semiofficial spokesman for health officers, I [1] pointed out that an aroused and educated public would soon no longer permit, in the name of medicine, the negligences and the inadequacies, the lack of system and the unprogressiveness of the practitioner of that day with reference to the treatment of venereal disease. There was more than an intimation then that in this moving world he would be displaced in this aspect of medicine if he did not wake up. And today, in one of the largest cities of this country we see one, and I think much the less desirable, aspect of this inevitable displacement—an alliance of venereal disease treatment with big business, which is shaking a local medical group to its foundations and raising a cloud of dust that will drift far before it subsides. True to a less desirable tradition in this country of successful commerce, we are turning here, as in some notable examples of medical organization, to big business for our plans and our ideals.

In the business plan of organization, one who has seen it in action for a number of years finds much to admire. It is the importation of the ideals of big business, and especially of an unqualified mass production, that gives the observer like myself anxiety. It will be far from an unqualified good if into the control of venereal disease by huge businesses are imported the all too evident weaknesses of wholesale medical service. While the field is susceptible of organization, it cannot but be harmed by the division of responsibility, the protection from the consequences of negligent and improper acts and the indifference to the individual patient which may accompany the mass management of the sick. The casual reaction toward distress, the suppression of medical talent, the routinization of procedure, so often pointed to as the possible consequences

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1. Stokes, J. H.: Public Health Activity and Private Practice in Venereal Disease Control, J. A. M. A. **76**: 1266 (April 30) 1921.

of so-called socialized or state medicine, are equally the products of a type of organized medical practice dominated by business ideals and production methods. The medical cafeteria for the treatment of venereal disease, like the hash house, will inevitably serve a devitaminized product to its huge clientele, unless from somewhere in its make-up there wells up a source of revivification. And where will that revivification come, unless from the ancient ideals of individualistic medicine—the service of the heart, with that of the eye, the ear, the hand. If then there must be organization and socialization of the treatment of venereal disease, let it come rather from the direction of the public health services of the world, who are yet the custodians of a crusader's idealism and its medical and university centers, than from big businesses. Or, best of all, let the medical individualist, the proud bearer of the traditions of personal service to the sick, now enter the movement himself. Let him unbend to the point where he can more pliantly weave into the warp of organization and draw from big business its art of reducing costs and economizing time and labor, while he leavens a larger and better output at a lower price, through the vitamins of distinguished and humane personality.

The trend of successful venereal disease control, as a world movement, is at this moment, then, unmistakably organizationward. On the other side of the globe the Scandinavian countries have the situation so completely in hand that a keen observer told me, last summer, that syphilology was joining the obsolete specialties, like that of the phlebotomist. In the great central hospital of Copenhagen there is actually said to be at this moment a register of every person in the country who has syphilis, with a record of his course and treatment; and the disease incidence even in the cities has dropped to the point where able men are regretting their association with a dying specialty. In the American city that I have mentioned, the head of a syphilologic department tells me that he has seen two chancres in two years, and most of the venereal disease practice of a city of 3,000,000 is said to have gravitated into the hands of the local medical-business concern. It is an open question whether some of the reduction in the tale of chancres in that city's outlying districts is not the result of the wholesale application of even only fairly effective methods to the whole population.

Turn, however, to Great Britain for an example more acceptable in many of its features to the orthodox medical mind of the present and past generations. Under the direction of a remarkable personality, Colonel Harrison of the British ministry of health, a whole nation, comparable in traditions, size and organization with our own—in fact, our mother country—is witnessing a reduction estimated to be as great as five sixths in the incidence of new infections with syphilis in 1925 and 1926 as compared with 1918. I commend for study as a remarkable epitome of a tremendous venture in social medicine the report of the organization and methods of the division of venereal diseases in the British ministry of health which has recently appeared.[2] To me the crux of the issue, and its neatest point, is the fact that not only is the head of the British scheme a distinguished physician and a gifted business man, but he has managed to import into the whole movement a spirit like that of the medicine of old. He believes he has accomplished what he has through humanity and voluntarism rather than through mechanistic routinization and law-enforced compulsion. He presents, moreover, the remarkable spectacle of a man who has asked the medical profession to sell itself to the public on the basis of its economy and effectiveness for the individual instead of its ancient dignities, rights and traditions as a guild, or its collectivistic claim of protection for society.

We are, fortunately perhaps for us as individuals, still some years removed from the day when an indignant public will demand of us an accounting, an explanation of the fact that this country can show no clear-cut evidence of a reduction in the incidence of venereal disease after years of care by the practitioner for the infected person. Is it possible to imagine, with our present undeveloped social consciousness with regard to such medical problems, a debate on the floors of the Congress of the United States as to whether venereal disease shall be reportable or not, and a decision such as was recently reached by the full House of Parliament after extended debate that there should be no reporting of these diseases, because it tended to discourage treatment? It is not alone the issue but the national consciousness of the venereal disease menace back of such a debate that deserves emphasis and contrasts with our own lethargy and attitude of laissez faire.

Against the day when the public shall discuss us and our shortcomings, or private corporate enterprise shall rule us out in the venereal disease field, let us then:

1. Encourage and use the university clinic, the medical school and hospital and the public health clinic. Instead of abetting they really stand between us and medical industrialism via big business. While they care for the indigent and the borderline types, let us copy their methods in our practice with the genuine pay patient.

2. Take more time to explain to the patient with syphilis what we are about, for an intelligent talk makes for cooperation, confidence and friendliness, and these are as important as drugs in cure.

3. Read and keep up to date, drawing our syphilotherapy from the journals and the schools, and not from hearsay and the pharmaceutical detail man. Indifference to modern knowledge spells the ultimate elimination of the private practitioner from this field.

4. Accept and put in practice in the management of early syphilis the fruits of the past decade's best controlled investigations.[3] At least thirty or even forty injections of an arsphenamine should be given in an early case, whether in three courses of ten, four courses of eight or one of twelve and three of eight. No complete rest intervals should be permitted until at least a year after the last symptom and sign has disappeared, the patient being kept continuously on arsphenamine, bismuth or mercury by injection or inunction. Treatment should be regulated arbitrarily according to this standard whether the infection was discovered while the Wassermann reaction was negative, by dark field examination, or later by the positive blood Wassermann reaction. One should never stop treatment or alter its character materially within a year after the first negative blood reaction. A complete spinal fluid examination should be made at the end of six months and at least within the first year. The sexual partner, the uninfected wife or the wife-to-be, should be mechanically protected from the infected mate, whether the patient is Wassermann positive or

2. Harrison, L. W.: J. Social Hyg. **15**: 193 (April) 1929.

3. Moore, J. E.; Cole, H. N.; Schamberg, J. F.; Solomon, H. C.; Wile, U. J., and Stokes, J. H.: The Management of Syphilis in General Practice, Reprint 13 from Venereal Disease Information, Feb. 20, 1929.

negative, for five years from the time he acquired the disease; and every syphilitic woman should be treated through every pregnancy. If we follow these rules, we are offering our patients in private practice the best that modern knowledge affords; we are on the modern firing line to extinguish the disease, and nothing but a reduction of costs to a figure at which we as individuals can no longer remain in business can drive us from the field.

THE PROBLEM OF BISMUTH

Bismuth will celebrate its eighth birthday this year. The degree of rationalization which its use has attained in that time is a striking tribute to a modernized syphilology when compared with the centuries through which mercury has dragged itself to an as yet imperfectly understood status as a medicament in syphilis. It is today a remarkable fact that, irrespective of the intrinsic merit or demerit of the heavy metal ion, there are more theoretically as well as practically eligible preparations of bismuth than there are of mercury. With both drugs we have had the problem of the soluble versus the insoluble salt. The ready absorption and quick action of the former and the storage of the latter with its unsolved elimination problems are alike with the two drugs. But bismuth unmistakably leads mercury in a lower toxicity and a nearer approach to the arsphenamines in its more effective spirillicidal action. It is easier in the case of bismuth to administer it in simultaneous combination with arsphenamine than it is with mercury, and this double intensity and new angle of attack will give bismuth the precedence in the future, I believe. Who ever thought of combining a soluble with an insoluble salt of mercury in an effective and comparatively reactionless preparation? Yet such a preparation is already available; and poor old mercury is in so fair a way to be forgotten by the advanced therapeutist that I have recently had to plead with a prominent arsphenamine chemist to concentrate a little on the development of a mercurial having at least somewhat the same degree of eligibility from the patient's standpoint. For metallic mercury the famous or, better, infamous gray oil is much more dangerous than bismuth metal, and mercurial organic combinations such as the salicylate are apparently much less satisfactorily metabolized. The combinations of mercury with the arsphenamine radical, too, were failures almost from the start. But the combination of bismuth with an arsphenamine in the form of bismuth arsphenamine sulphonate already has a bright future ahead of it. Only the limitations of the human buttock, and they may be more real than we now appreciate, stand between bismuth and a triumph over the ancient and honorable mercurial inunction.

But let it not be forgotten that rationalization and evaluation of a drug are two different problems and that, while the former may be pushed by the chemist and the pharmacologist, the latter must wait still to some extent on a natural demonstration of the curability of the disease which, particularly in the case of syphilis, time alone can thus far completely afford. Bismuth may be rationalized but it is not yet evaluated for man. One of the first steps in that direction, by Anwyl-Davies,[4] more than suggested that mercury is still the more effective reducer of the Wassermann reaction except in such cases as the Wassermann-fast infection, in which a change in drug alone rather than the new drug itself is often sufficient to produce an effect. If there were mercurial preparations as eligible pharmaceutically and chemotherapeutically as are the available forms of bismuth, it would be easier to adhere to the course of wisdom and give today's patient half his heavy metal treatment in bismuth and half in mercury. Even with the defective salicylate and the objectionable mercurial inunction, it is still wise, I think, to give at least a third of the course in mercury, though the temptations afforded by bismuth tend to reduce the place of mercury more and more to that of a subsidiary.

The interrelations of bismuth and arsphenamine deserve some special comment. The French are now learning, if the observations of Jeanselme,[5] Queyrat, Bayet, Harrison and others mean what they seem to, that it is a dangerous matter for the public health, albeit easier for the patient and his physician, to substitute the limited spirillicidal action of bismuth for this superior quality of the arsphenamines. The present recrudescence of syphilis in France, as compared with its subsidence in the surrounding countries, has been considered in part to be a function of the more prolonged infectiousness of the patient in whom bismuth is substituted for arsphenamine therapy. True, the very authors of this conception have recently qualified their statements; nevertheless, if I may offer any admonition, let it be in the direction of an unwavering loyalty to the arsphenamines. Never use them alone or insufficiently, and never, under any circumstances, substitute bismuth for them in the treatment of the early case.

In the management of the late case, bismuth has not yet been evaluated. In its effect on the subjective symptoms of neurosyphilis, such as lightning pains, for example, it has many of the excellences of the arsphenamines with less shock and disturbance due to Herxheimer and therapeutic paradoxic effects. But it is occasionally a fast-acting and unexpectedly toxic drug, and I am not by any means sure that in late cardiovascular and in hepatic syphilis it does not sometimes do serious harm when used at the outset. In general, however, as a means of opening the course in the patient with late syphilis, especially if he has been incompletely studied with reference to the nervous system, bismuth has most excellent qualities. It prepares the way for the arsphenamines and gains the patient's confidence for a fuller study. In moments of syphilologic emergency, however, I fall back on the, to me, still incomparable virtues of the soluble mercurial salt, such as the succinimide, which, if one knows how to give it, is one of the precious legacies of the too rapidly receding past. Hawkers of bismuth combinations, in their effort to bull the market for their drug, are, I am afraid, actually bearing it. This phraseology, appropriate to an epoch of the speculative in syphilotherapeutics, means in plain English that there are too many insufficiently studied and outright worthless bismuth preparations being exploited by the pharmaceutic houses. If prayers could do it, the wrath from above would certainly descend on the head of the concern which, after preparing some oleaginous mess in its kitchen laboratory, with a "bi" somewhere in the syllable combination of the name, if nowhere else, proceeds to send out samples with folders retailing the appreciation of Dr. Sap of Little Sticks, who has used it on six hillbillies with astounding results.

What to do with such a situation, in which misbranding is too often the least serious fault of a preparation,

4. Anwyl-Davies, Thomas: Bismuth in the Treatment of Syphilis, Lancet **1**: 148 (Jan. 15), 199 (Jan. 22) 1927 (contains a thorough study of bismuth bibliography); abstracted by Stokes, J. H., and Chambers, S. O.: Am. J. M. Sc. **175**: 425 (March) 1928.

5. Jeanselme and Burnier: Bull. Acad. d. méd. **100**: 749 (July 3) 1928. Gougerot and Burnier: Ann. d. mal. Vén. **24**: 275 (April) 1929.

engaged the attention of an international conference at Geneva last summer, with the conclusion that, if national laws could not stop fraud, international action was powerless. It is becoming increasingly apparent that the effectiveness of a heavy metal in the treatment of syphilis is conditioned not alone by its metallic content or the structural formula of the salt used but by the physical state of division, the vehicle, the amount of local reaction excited and other factors, so that the subject is increasing, not diminishing, in complexity day by day. Intravenous injection of bismuth preparations is in process of exploitation, though its merits and demerits have been no more thoroughly explored than have those of mercury by a similar route. The Council on Pharmacy and Chemistry of the American Medical Association has decided that the intravenous administration of bismuth compounds in the treatment of syphilis appears thus far to be strictly contraindicated for the reason that the therapeutic dose of bismuth approaches too closely to the toxic when used by this route. My own suggestion for a comparatively simple recipe applicable to a large proportion of problems of the sort at the present day is this: Select two or three good bismuth preparations and learn to give them without disturbing the patient. Then let the rest go by, for five years, until an authoritative summary appears in the literature. Practically all the work that a bismuth preparation can do for the average man today can be done with the fat-suspended potassium bismuth tartrate, the salicylate or, if one considers European practice, the glucose-suspended hydroxide or metallic bismuth. If we wish the soluble salt action of bismuth, we should remember that the frequency of injection needed for an effect is not yet fully determined, and play safe by adding or combining with an insoluble, as in sodium bismuth tartrate (soluble) and quinine bismuth iodide in fat suspension. This combination is relatively nonirritating, even for the patient who has a persistent reaction to an effective insoluble such as potassium bismuth tartrate. Let us bring what pressure we can to bear to compel manufacturers to subject their products to systematic clinical tests by responsible and completely equipped clinical organizations and by the Council on Pharmacy and Chemistry, before they loose their detail men, their storms of pamphlet literature and their postal card sales campaigns on the practicing physician.

THE PREVENTION AND CONTROL OF CARDIOVASCULAR AND NEUROSYPHILIS

I had thought to discuss the problems of the field of prevention and control of cardiovascular and neurosyphilis at some length, but I fear that I would first be carried into diagnosis, which is not part of my allotment, for in early diagnosis lies half the crux of the issue. I would, moreover, repeat myself on early effective treatment, whose skeleton outline I have just given. And I would still further repeat myself in my ensuing remarks on smoother treatment. I shall offer only one comment, then, on each topic. Keep arsphenamines away from injured myocardiums as determined by the combination of coronary symptoms and the electrocardiogram.[6] In the future neurosyphilotherapeutics, look for the decline of intraspinal therapy, which will soon have only a restricted usefulness, and its replacement by tryparsamide or a successor, minus the eye complications, which, while not common, are so thoroughly disconcerting. The recent premature death of Loevenhart is a severe blow to these hopes.

In a Delphic mood I might even dare to predict the retirement of malaria to the sidelines, but I have too many friends to risk such unpopular forecasts. No one can deny the importance of malaria in the nonspecific treatment of neurosyphilis. But there is an inexorable logic in the light of which all forms of treatment for syphilis, including malarial therapy, should be scrutinized, and of which the malarialists too readily lose sight. In general it is sound therapeusis to encourage and stimulate the development of methods with the lowest possible mortality. Next in principle stands the maxim that methods should be given preference which are as cheap as possible, as little disturbing to the patient's effective economic and personal life as possible, and as readily accessible to the mass of patients through the services of their personal physicians as possible. Given even approximate equality of effectiveness, there can be no question that these criteria should determine the choice of method in the treatment of neurosyphilis. Even with a marked difference in ultimate effectiveness, these criteria should determine first and second choice of methods. A method such as malarial therapy, with a high mortality, relative costliness in temporary incapacity, relative inaccessibility in that only the most expert and experienced should attempt it, and requiring institutional rather than home medical management, stands on rational grounds second to a method such as tryparsamide therapy, which, while perhaps involving an important risk in injury to vision, is in reality under proper control a reactionless, cheap, accessible and simple method for the average physician to use on the ordinary patient. Granted anything approximating equality in results, it would seem that tryparsamide should be the method of first resort, and malaria a second choice. This does not mean for a moment that malaria will invariably be a second choice. Proper selection and expert management of the malarial patient reduce mortality remarkably, and there are of course many patients to whom the inconveniences and inaccessibility of malarial therapy are matters of small moment. In fact, one of the beauties of malarial therapy from the standpoint of the practitioner is the convenient way in which it shifts the responsibility for the after-effects, the stormy and prolonged convalescence, the partial or unsatisfactory result, and the death onto an institution whose broad back can well bear a mortality ranging under the conditions of today from 5 to 30 per cent.

I therefore hold no personal brief for any method of treatment of neurosyphilis, but rather for the intelligent selection of method with the needs of the patient foremost in mind. Malaria is almost undoubtedly the most effective form of fever therapy, granted a constant and easily controlled strain of plasmodium. It is in no sense of the word a method for the practitioner, as tryparsamide is after the first few weeks, but a method for experts in as strict a sense as was intraspinal therapy. It is not a method to be practiced here, there and everywhere that there may be a hospital bed on which to lay the patient. It belongs in centers which concentrate on the perfection of its technic with all the intensity and resources imaginable. It demands large experience and absolute patient control. It does, and probably always will, involve an element of greater mortality, more risk to life and limb than tryparsamide,

6. Stokes, J. H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1926, pp. 852-854.

though in the end its effectiveness, bout for bout, will perhaps be greater.[7]

It must be frankly admitted, by one who observes the trend of things, that malaria has been greatly abused as a method of treatment and that its Viennese rubber stamp has too easily taken this country by storm. In conversations with neurologists of balanced experience, such as Foster Kennedy, and with men to whom the choice of methods means nothing one way or the other, for each is as available as any other, such as Solomon, one derives the unmistakable impression that malaria has become a therapeutic fad, used without judgment, and with a needless crop of disappointing and disastrous results. In time, it will undoubtedly settle into its proper place as one, but only one, of the important methods of dealing with neurosyphilis today. It will then be used in centers specially equipped for it, and not at every crossroads, and it will be used far less than it is today as the less spectacular, safer and more accessible methods of the future gain in popularity. In time it will be totally superseded, not by tryparsamide, perhaps, but by some successor, though tryparsamide is rarely used today in the way which the studies of Solomon [8] and of Bunker,[9] for example, have shown to be most effective.

One who wishes to see what tryparsamide can do must use it continuously, not in broken courses, in the individual case for not less than two years, before expecting to find the serologic reversal of blood and fluid reactions on which so much stress is laid. The combination of tryparsamide and of a nonspecific fever induced by typhoid-paratyphoid vaccine, whose possibilities have barely been touched and whose simplicity and accessibility exceeds that of malarial treatment, is a direction in which important advances can take place. Have I made it clear that one does not oppose malarial therapy these days—that one opposes its universal and uncritical acceptance and its misapplication? Useful, valuable in its place, we none the less admit its serious shortcomings and hope for its replacement by something much better—a something which perhaps is already in sight among the possibilities of chemotherapy.

SMOOTHER TREATMENT

Why is the syphilotherapeutic road so rough these days that thousands of patients desert when less than half over it; thousands of physicians are driven to the most devious expedients and substitutions of ineffective remedies in the effort to keep out of trouble, and manufacturers are concentrating on detoxification of their products at any cost, instead of increased therapeutic activity? It is hard to place the bulk of the fault in any one direction. There can be no doubt that the time, persistence and fortitude required for cure are too much. One cannot, moreover, work with drugs whose narrow margin of greater toxicity for organism than patient is the secret of their effect and not have toxicity troubles. So closely are toxicity and therapeutic effectiveness interrelated in the present armamentarium that it is almost to be expected that gain for the one means loss for the other. Had I the time I could cite some surprising examples of the inverse relation between reaction in the patient and effect on the disease. Queyrat,[10] in a brief pronouncement, has designated this as a major issue in continental practice, and it is such in the United States as well, I believe. But though the road is dimly seen in these directions, there is one direction in which it is clearly defined and our obligation unmistakable. We can smooth the road of treatment by an irreproachable technic in the use of the agents we have available, and in a thorough application of the known principles governing their action and reaction in the patient. Where do we of the rank and file meet our difficulties in the treatment of the patient with syphilis?

1. We do not examine the patient adequately before we fire the first shot. Inevitably, therefore, after pumping a toxic drug into an unknown recipient, we are frequently confronted with the unexpected. Incomplete examination is the curse of syphilologic treatment, as it is of diagnosis today. Too often the physician proceeds on the basis of a single suspicion-arouser, the positive blood Wassermann reaction, to give a heavy dose of one of the most powerful drugs in existence. Suppose there is a sluggish pupil that he did not see, or a buzzing ear that he did not ask about? In a few hours the patient is perhaps in convulsions or deaf for life. Perhaps he is merely anuric or paraplegic. Perhaps, to descend to the minor frequencies in accidents, he just vomits and can't stop, or has a chill, a high fever and a rash, and repeats the performance time after time until the discouraged physician calls the detail man in consultation, or sends the drug supply back to the manufacturer with angry words, forgetting the ancient maxim of shop practice "A poor workman always blames his tools." Perhaps with a silent resolve he falls back on "mixed treatment," not realizing that that is precisely what he has been using from the start.

2. We too often fail to envisage an aim, a purpose for which we are treating, in part because we have not appraised the case adequately. Lacking an intelligent or planned objective and a clearly defined method for reaching it, too often we just shoot and shoot until the target totters and goes flat. There is at the present day a reasonably effective technic for reaching almost any objective in the treatment of syphilis. Some are easy to reach, some, to be sure, are difficult. But it remains true that there is comparatively little in the management of the syphilitic patient that an intelligent physician cannot compass, if he knows his patient and his drugs, and will accept a little of the advice, either personal or set down in black and white, in books and literature, which is available. Of course, there is the unappraisable idiosyncrasy of the patient, and no one with experience will deny that it is always important and sometimes uncontrollable. But we seek refuge too often and too easily in this shell hole of "idiosyncrasy" when the patient blows up. There is a way around or a means of forestalling most difficulties in syphilotherapy.

3. The practitioner systematically forgets, or has never understood, the Herxheimer reaction, or therapeutic shock. A third of his troubles come from this source. He does not appreciate how serious may be the flare-up in an active process, or in a small focus at an important point in the patient's tissues, which is produced by a large dose of such a fast-acting, spirochete-destroying drug as an arsphenamine. Accordingly he shoots in a hammer-shot, a huge initial dose, without preparation or investigation, and cripples his patient's

7. The recently published comparisons of Bunker and of Solomon indicate that the end-results by the two methods are approximately the same.

8. Solomon, H. C., and Viets, H. R.: Tryparsamide Treatment of Neurosyphilis: Second Report, J. A. M. A. **85**: 329 (Aug. 1) 1925.

9. Bunker, H. A., Jr.: Effect of One Hundred Injections of Tryparsamide upon the Spinal Fluid in General Paralysis, Am. J. M. Sc. **175**: 265-272 (Feb.) 1928; Recent Methods in Treatment of General Paralysis, Am. J. Psychiat. **8**: 681-694 (Jan.) 1929.

10. Queyrat, L.: Personal communication to the commission of experts on Syphilis and cognate subjects, Health Section, League of Nations.

tolerance, sensitizes him, or destroys his confidence, if nothing worse. No initial dose should ever be more than half the full dose. The fact that all the contents of the 0.9 Gm. ampule will dissolve in the water used is no excuse for giving it. Therapeutic shock in the treatment of syphilis is avoided in general by the procedure spoken of as "preparation." This consists essentially in the preliminary use of a slower-acting drug, such as mercury or bismuth, or one with relatively little specific effect, such as iodide. "Preparation," provided one uses a sufficiently reduced arsphenamine dosage at the outset, is unnecessary in the average robust patient with early syphilis, but it is so nearly a fundamental necessity in all the later aspects of the disease, especially when examination is unavoidably incomplete, that it should become an established rule of practice. Where involvement of the heart, the nervous system, a viscus such as the liver, or a special sense organ is suspected or apparent, it is unwise to begin treatment with an arsphenamine. Instead, various grades of rapid effect without the production of shock can be obtained by the intramuscular use of a soluble mercurial salt, which in my estimation is still the fastest and safest preparation for a late case demanding prompt effects. The mercurial inunction, often used, is the slowest of all methods of preparation and if employed should not be used for a shorter period than four and preferably six weeks. Insoluble mercurials really no longer have any place in the preparation of patients for an arsphenamine. Bismuth is excellent in the preparation of neurosyphilis for arsphenamine, but its effect on the heart and perhaps even on the liver is still a little uncertain and I have had just enough disconcerting experience with it to make me cling to mercury in preference. The length of a period of preparation for arsphenamine must be determined by the status of the individual case, but twenty injections of from one-sixth to one-fourth grain (11 to 16 mg.) of mercuric succinimide, at the rate of from three to five injections a week, or from four weeks to three months of inunctions, or from six to twelve weeks of an average insoluble bismuth salt intramuscularly are fairly representative of the ordinary requirements.

4. We forget too easily the double-edged effect of rapid healing produced in a syphilitic lesion by an arsphenamine. We have had to learn, by painful experience, the seriousness of curing syphilitic hepatitis only to destroy the patient by the effects of an uncompensated and hurriedly induced fibrosis. In the nervous system, this issue of the therapeutic paradox seems less important, or perhaps less well worked out. In the eye, the ophthalmologists still insist that it is important, and they were among the first to stand by their guns on the issue. In cardiovascular syphilis it is vital, and the most careful selection, not always successful, is needed in the differential management of early and late aortic lesions to secure permanent arrest for those in whom it is possible, without hastening the death of those for whom there is nothing to expect but delay and palliation.

5. The therapeutist too often does not know his drugs and their complications. Whence comes the toll of persons killed each year by acid arsphenamine dissolved incompletely in a few cubic centimeters of water and injected into the patient by an intern who was never taught to read a label or to differentiate between neoarsphenamine and arsphenamine proper without one? Every such case, and they come to the knowledge of all of us, stands out like a lighthouse in the public view of the treatment of syphilis. How many of us ask the patient if he itches, as a warning of impending dermatitis, or look for purpuric remnants before giving the next injection?

6. We overlook too easily the niceties of technic. Hurting the patient in any therapeutic procedure is, in cumulative effect, a serious matter. The things that the dull needle, the mishandled spinal puncture and the lumpy painful butt do daily to the effective treatment and the hope for extermination of syphilis have not yet been successfully estimated; but in some as yet unmade study of follow-up, I feel sure they will come to light. Cost and reaction stand today among the chief causes of our failure to control the disease.

It is unfair to close a comment on therapy with criticism alone. Allow me, therefore, a few moments to make amends. Those of us who have for years had the advantage of clinics at our elbows do not always clearly appreciate the difficulties of the physician "on his own," who must meet and negotiate the consequences of his therapeutic acts. In my more recent years in personal practice I have gained an impression of these difficulties. The use of arsphenamine is an example. It is a drug for experts, not the average; and while I am sure it is the all-around best, few will get the benefit of it. Treatment systems based on it, as most of the proved effective technics are today, will go begging. To those who wish to use it, I suggest that a technician, and one only, be trained to its preparation in the office. The art of preparing an arsphenamine, like that of the good cook, is to some extent incommunicable. Arsphenamine solution when prepared should stand for thirty minutes to an hour before injection in order that advantage may be taken of the observations of Reid Hunt. Drop by drop neutralization and the one-sixth excess of alkali, with a mixture of the monosodium and disodium salts which it produces, gives less trouble with the veins and with the patient than does the orthodox quantitative neutralization. In large clinics the arsphenamine solution should be colored by phenolphthalein, as suggested by Chambers, to prevent accidents, and the drug itself should be marketed in a clearly marked ampule, recognizable even without the label. No matter how large the clinic, neoarsphenamine should be made up dose by dose, never should be shaken, and the nozzle of the syringe should be kept below the surface of the liquid, so as not to aerate it. It is the mark of the greenhorn to squirt neo. In contrast to arsphenamine, it should never be allowed to stand. If it does not dissolve almost instantly, throw it away and complain. In its therapeutic use, smaller doses (from 0.45 to 0.6 Gm.) and shorter intervals (from three to five days) between injections with longer courses should be the rule. Sulpharsphenamine, whose only excuse for being was its susceptibility to intramuscular administration, I have finally abandoned entirely, after watching the toll of hemorrhagic and purpuric fatal accidents and the incidence of dermatitis for which it seems responsible. There is no excuse at all for its intravenous use; and it has been superseded, in my esteem, at least, by bismuth arsphenamine sulphonate for intramuscular injection. Silver arsphenamine deserves and is receiving fuller study.

As I have said, the first third of the troubles of the practitioner in the treatment of syphilis comes from unfamiliarity with the rules for avoiding the Herxheimer reaction or therapeutic shock. The second third of his troubles comes from violation of the fundamental rule of intravenous procedure "Inject slowly!" To

"shoot" neoarsphenamine into a patient is syphilotherapeutic damnation, and the pernicious practice of "a cc. a second" in syringe technics which must have gained a foothold in war time has wrecked more potential good treatment results at the start than almost any technical cause. I adjure physicians to inject slowly—absurdly slowly, unbelievably slowly. In the next edition of my textbook I promise that only one gage of needle will be described for all syringe injection—the hypodermic of 24 or even 26 gage, which makes speed impossible and pain infinitesimal, comparatively speaking. If the physician will pull back strongly on the piston, and use new needles frequently, he will have no difficulty in recognizing that the needle is in the vein, in spite of the small gage.

In the giving of treatment by the intramuscular route, small caliber needles of a not too brittle and a rustless steel, while slow with the more recent heavy suspensions, prevent the annoying superficial and painful nodules due to leakage back. The needle should be kept in place, as Shaffer [11] advises, for a minute or two after the injection, and one should use the trick, which I first saw in the syphilis service at Johns Hopkins, of having the patient draw a full breath to distract his attention as one plunges it in. A strict asepsis is essential, and thorough shaking and previous warming of the insoluble drugs diminish pain. Keeping to the upper outer quadrant of the buttock and injecting deep into the muscle body has, I think, convincingly established itself as the best procedure. There are batches of insoluble preparations which cause outbursts of local reactions, possibly because of the state of physical division of the drug, and there are certain patients who cannot take an insoluble intramuscular preparation at all. The problem that confronts the therapeutist now is the conservation of the buttock that must stand six courses of a bismuth preparation and still permit the patient to get about, while it yields up its load at a satisfactory rate to the blood stream. In view of numerous observations, including the studies of Cole,[12] of Kolle [13] and of Erdman,[14] it is a question just what the fate of bismuth thus injected may be. A helpful practical measure for keeping a buttock in condition is the nightly hot sitz bath. The patient reads his evening paper, sitting in 6 inches of very hot water in his bath tub, with his back reclining and his heels on a box or on the faucet handles.

In the palliation and control of arsphenamine reactions, ephedrine given before injection, for two days, in 50 mg. doses, has a confirmed place in my practice, in preference to epinephrine used either as prophylaxis or as treatment. The detoxifying and irritation-reducing effect of calcium can, I think, be utilized, and 10 cc. of calcium gluconate intravenously or intramuscularly just before the arsphenamine injection has seemed to smooth the course of some otherwise exceedingly reactive patients. It is possible that some of the reactivity to the arsphenamines in the later courses of a systematic treatment schedule is the product of an acquired sensitivity on the part of the patient, which such measures as I have suggested would seem rationally to offset.

I fear that this has been a presentation marked rather by breadth of excursion and colloquial terminology than by depth. While it seems a far cry from the socialized medicine of the venereal disease control movement across the Atlantic to the optimum site for depositing the contents of an ampule of bismuth salt in a buttock, great and little in these issues pivot on a single point—the service of man. If we hold steadfastly before us in the storms of public controversy over social policy, as in the dubieties and uncertainties of individual technic and conflict of opinion, his welfare, rest assured, we shall not go astray.

3800 Chestnut Street.

RAYNAUD'S DISEASE ASSOCIATED WITH CHRONIC ARSENICAL RETENTION

REPORT OF CASE CURED BY SODIUM THIOSULPHATE

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One of the most interesting and significant of recent developments in medicine has been the work of Throne and Myers [1] on the relation of arsenical retention to the genesis of eczema. At the New York Skin and Cancer Hospital they have demonstrated the presence of arsenic in 30 per cent of the cases of this disease. That arsenic is the main pathogenic factor in these cases is shown by the high percentage of cures obtained with sodium thiosulphate. The work of these investigators, however, has gone a great deal further than the successful treatment of a number of hitherto refractory cases. Many highly suggestive facts have been brought out.

In the first place it is quite characteristic for a case of arsenical eczema, when first seen, not to show arsenic in the urine. A twenty-four hour specimen of urine collected after the intravenous injection of 0.5 Gm. of sodium thiosulphate will show definite amounts of arsenic. They have fixed the figure of 30 micromilligrams of arsenic per hundred grams of dried material as the maximum "normal" or, perhaps better, as the maximum amount that is without apparent pathogenic effect. Although for a number of years arsenic has been found in various human organs, so frequently indeed as to be looked on as a normal finding, it is highly dubious whether such arsenic is normal at all or represents a deposit from outside sources which

11. Shaffer, L. W.: The Fate of Intragluteal Injections, Arch. Dermat. & Syph. **10**: 347-364 (March) 1929.

12. Cole, H. N.; Farmer, H. L., and Miskdjian, Hagope: Intramuscular Absorption of Some Insoluble Bismuth Compounds as Revealed by Roentgen Ray, Arch. Dermat. & Syph. **13**: 219 (Feb.) 1926.

13. Erdman, Bernhard: Is Bismuth Absorbed? J. A. M. A. **92**: 1252 (April 13) 1929.

14. Kolle, W.: Med. Klin. **20**: 1097 (Aug. 10) 1924. Kolle, W., and Vers, E.: Deutsche med. Wchnschr. **52**: 1075 (June 25) 1926.

1. Myers, C. N., and Cornwall, L. H.: Normal Arsenic and Its Significance from the Point of View of Legal Medicine, Am. J. Syph. **9**: 647 (Oct.) 1925. Throne, Binford; Van Dyck, L. S.; Marples, Eleanor; and Myers, C. N.: Arsenic as an Etiological Factor in the Genesis of Eczema, New York State J. Med. **26**: 843 (Oct. 15) 1926. Marples, Eleanor; and Myers, C. N.: Action of Sodium Thiosulphate in Treatment of Metallic Intoxications and Lesions of the Skin, Proc. Soc. Exper. Biol. & Med. **24**: 39-42, 1926. Throne, Binford; Van Dyck, L. S.; Marples, Eleanor; and Myers, C. N.: Treatment of Arsenical Eczema, New York State J. Med. **26**: 970 (Dec. 1) 1926. Müller, E. F.; Metz, G. P., and Myers, C. N.: Arsenic Lesions of the Skin, Arch. Dermat. & Syph. **15**: 186-193 (Feb.) 1927. Throne, Binford; Van Dyck, L. S.; Marples, Eleanor; and Myers, C. N.: Arsenic Findings in Dermatological Conditions, New York State J. Med. **27**: 757 (July 15) 1927. Throne, Binford; and Myers, C. N.: Psoriasis, New York State J. Med. **28**: 914 (Aug. 1) 1928. Myers, C. N.; Van Dyck, L. S., and Throne, Binford: Arsenic as a Problem in Present-Day Public Health Management, M. Times, New York **57**: 134 (May) 1929. Myers, C. N., and Throne, Binford: The Relation of Arsenic to Public Health, New York State J. Med. **29**: 871 (July 15) 1929; Health Hazards from the Ingestion of Small Amounts of Metals, ibid. **29**: 1258 (Oct. 15) 1929.

may or may not cause trouble. Such a deposit of arsenic may be frequent, or even usual, but it is not normal.

During the period of thiosulphate administration, the excretion of arsenic shows intermittent periods of ebb and flow, depending apparently on the dynamic ability of the cells to rid themselves of the metal. At times during treatment there may occur cessation of improvement or even exacerbation of the disease with the appearance of vagotonic symptoms. This apparently is due to the overstimulation of the vagus by the sodium component. At this juncture, discontinuing the sodium thiosulphate and administering calcium chloride intravenously will restore equilibrium.

One striking observation made by the investigators referred to has been the frequency with which, in cases of arsenical retention, there is a disturbance in the sugar-chloride ratio in the blood. Normally this is about 1 to 5. In the retention of arsenic and also of other metals, the ratio tends toward the figure 1 to 4, the sugar being relatively raised, the chloride relatively lowered. This phenomenon, although not constant, appears in such a strikingly large number of cases as to be of considerable practical value.

In a large series of cases of eczema in nursing infants, in which there was absolutely no history of any other source of contamination, Van Dyck found arsenic in the maternal milk in 72 per cent.

The demonstration of arsenic in so large a number of cases raises at once the question of the source of such intoxication. The opinion is that arsenical retention arises in general from but three sources: medicinal administration, accidental contamination or industrial exposure. If these were the only sources they would be comparatively infrequent and would in no wise account for its demonstrated occurrence in such a large and consistent series of cases. Such, however, is by no means the case. Arsenic has been found in the most unexpected situations, in food, drink, wearing apparel and decorative pigments.

Many shell-fish from contaminated waters have shown an arsenical content. In the cocoa cases of England, the potassium carbonate used to render the cocoa soluble for some reason or other had a high arsenical content. The enormous use of arsenical insecticides makes fruits and vegetables a potent source of poisoning. Cotton has been shown to be contaminated by the calcium arsenate used to combat the boll weevil. Woolen fabrics may derive contamination from sheep-dip or, when in a finished state, from moth preventives. The tin used to impregnate silk for the purpose of increasing its weight may at times be associated with small amounts of arsenic. Tobacco has frequently shown contamination. Among commonplace, apparently innocent medicaments, rhubarb and soda, sulphur, sulphonated bitumen and calamine and zinc lotion have at times been shown to contain it.

CRITERIA FOR IDENTIFYING ARSENIC AS CAUSE OF A DISEASE

Given (1) the widespread and unsuspected sources of arsenic, (2) its demonstrated pathogenic action in 30 per cent of cases of eczema and in some examples of scleroderma, leukoderma, pigmentation and pruritus, and (3) its specific action on the sympathetic nervous system, it would be appropriate and useful to pick out an example of sympathetic nerve disease of unknown etiology and investigate it from this point of view. To demonstrate a relationship between arsenic and the disease in question, the following postulates must be strictly observed:

1. There must be a definite history of unequivocal exposure. The mere chance of contamination having been derived from the sources mentioned would not be sufficient.

2. Arsenic must be quantitatively demonstrated in the urine.

3. Cure must follow the administration of sodium thiosulphate. Before the final establishment of cure, progressive improvement should parallel the course of treatment.

4. Certain of the recognized concomitants of chronic arsenical poisoning should be present, such as eczema, waxy pallor, blepharitis, and garlic odor of the sweat. As evidence, these last are of only circumstantial value; but, without possessing any of the elements of rigid proof, they are certainly entitled to be considered suggestive.

It must be strictly understood that any conclusions derived from a case so investigated pertain only to the case in hand. Convincing demonstration, however, would certainly be considered a valid starting point for the similar study of other cases. From this point of view, the case of Raynaud's disease here reported is presented.

REPORT OF CASE

A woman, aged 38, gave a history of having worked from 1912 to 1926, a period of fourteen years, in a greenhouse, where Green Fly Spray and Black Leaf 40, both arsenical insecticides, were used daily and in great profusion. In 1922 she developed an intensely pruritic eruption on the back of the right hand and fingers, lasting a month and clearing up entirely. Every spring a highly pruritic rash developed on the anterior surface of the wrists. For years she had suffered from chronic constipation and frequent sore throat. Since the middle of 1928 her endurance had been poor. She ate starch and sugar to excess.

The specific complaint started in February, 1929, at first limited to the terminal phalanges, and finally involving the entire length of the fingers and toes. On exposure to cold, the fingers and toes suddenly became dead white and absolutely numb. On immersion in hot water to restore circulation, the blood returned very slowly and the fingers turned a deep blackish purple and became excruciatingly painful. In about fifteen minutes the normal pink color returned. This course of events was definitely related to exposure to cold. Driving a car in cold weather inevitably brought on an attack. The combination of cold plus gripping of the wheel seemed peculiarly a precipitating cause. The condition was always worse toward evening. Although not having yet progressed to the stage of gangrene, the disease had become a serious matter. The pain of the stage of congestion was agonizing. In the morning there was always slight swelling of the hands and slight pain and stiffness of the interphalangeal joints, an apparently unrelated condition. Since the summer of 1928 the patient had noticed that her skin smelled like onions. The rest of the personal history was irrelevant.

Examination showed somewhat impaired nutrition, the patient looking vaguely below par, tired and anxious. The skin of the face was tense, shiny and slightly waxy, and showed many fine telangiectases. There were seborrhea, thinning of the outer half of the eyebrows, acro-asphyxia and livedo annularis. There was slight fulness of the isthmus of the thyroid. A pallid streak was seen in the vermilion of the upper lip. The tongue was coated and indented along the edges. The fauces were chronically injected and the tonsils were small, deeply buried and full of pus. The lingual tonsil was moderately enlarged. There was some gingivitis, apparently due to a badly fitting plate. There was marked chronic injection of the tarsal conjunctivae. The systolic blood pressure was 104; diastolic, 66. The rest of the

physical examination, including inspection of sinuses, pupils, eyegrounds, heart, lungs, abdomen and reflexes, was negative.

Laboratory tests revealed the following conditions:

The urine was clear, amber and acid, with a specific gravity of 1.014. A marked trace of albumin was present, but sugar, acetone and diacetic acid were absent. Microscopically there were no casts or cylindroids, but there was marked oxaluria, many white cells present singly and in clumps, a few red cells, many bacilli, and a few squamous epithelial cells.

The blood count showed: red cells, 5,000,000; hemoglobin, 80 per cent; white cells, 9,200, with polymorphonuclears, 68 per cent, lymphocytes, 24, transitionals, 5, eosinophils, 2, and basophils, 1 per cent. There were no abnormalities in the shape or staining of the red cells.

The Wassermann reaction was negative.

Chemical tests of the blood showed sodium chloride, 437.7; sugar, 103.2; urea nitrogen, 11.4; uric acid, 1.98.

The urine thirty-six hours after the intravenous injection of 1 Gm. of sodium thiosulphate showed 0.068 mg. of arsenic per hundred grams of dried material.

The diagnosis was (1) Raynaud's disease; (2) chronic arsenical retention; (3) chronic tonsillitis; (4) pyuria; (5) chronic arthritis, and (6) carbohydrate fermentation.

Treatment consisted of 1 Gm. of sodium thiosulphate given twice a week from Oct. 7 to Nov. 14, 1929. From then on the patient was given the same dose once a week. Incidentally she was put on a low carbohydrate diet, with enemas of sulphonated bitumen and one-fourth grain (16 mg.) of thyroid twice a day.

The disease ran the following course: The regular attack before treatment was started consisted of an invariable sequence of events: (1) waxy pallor of the fingers and toes extending up to the metacarpophalangeal and metatarsophalangeal joints, (2) blackish purple cyanosis accompanied by intense pain, and (3) restoration of the normal color. The first dose of thiosulphate was given, October 7. October 11, the patient reported that she had had one attack the previous evening while driving her car. The pallor extended only to the proximal interphalangeal joints instead of to the metacarpophalangeal, and the toes were not involved. On immersion of the hands in hot water, the purple stage was just as marked but the pain was much less severe. During the day the pain in the fingers was much less marked. The patient felt and looked much better and was less fatigued. October 14, she reported no pain in the fingers. She had awakened the past two mornings with marked numbness in the anterior surface of the wrists and slight numbness in the left foot, without pain or pallor. October 17, she reported that two attacks of pallor had occurred in the preceding two days. The purple stage was of shorter duration and was practically without pain. There was an occasional purple stage without the usual initial pallor. There was no pain in the toes.

October 18, a very cold day, there were two marked attacks of pallor of the fingers followed by a purple stage of much longer duration than usual but with practically no pain. October 19, there was a slight attack of pallor of the fingers and numbness of the toes without pain or cyanosis. The general condition was much better. There had been no headache, fatigue or insomnia since treatment was started. October 25, the patient reported that there had been no attack until that day, and that then the sequence of "pallor, normal color," without pain and without the usual intermediate stage of deep cyanosis and intense pain, had occurred. The patient was convinced that the disease had been definitely modified.

October 31, the patient reported the occurrence of two attacks of the sequence "pallor, purple, normal," without pain, in the past week. November 7, there were two attacks of "pallor, purple, normal," without pain, each associated with driving her car in very cold weather. Cold alone, without driving, did not occasion an attack. November 11, she reported two attacks of "pallor, purple, normal," without pain, since the last visit. In one attack the pallor extended only to the proximal interphalangeal joints. She drove her car 100 miles in moderately cold weather without an attack. November 14, she had one attack of "pallor, purple, normal," without pain. Since this date, up to December 18, she had had absolutely no attack, in spite of cold weather and in spite of driving. November 20, a tonsillectomy was performed. Since then the arthritis and the pyuria have definitely lessened. There is a marked improvement in the general condition.

SUMMARY

In a case of Raynaud's disease in which there was associated a chronic retention of arsenic, the arsenic was accounted for by an unequivocal history of exposure to arsenical insecticides over a long period of time.

Arsenic was demonstrated quantitatively by the Marsh test.

Under sodium thiosulphate treatment there was progressive improvement and finally complete disappearance of symptoms.

Well known symptoms of chronic arsenical poisoning were present; namely, recurrent eczema, waxy pallor, injection of the tarsal conjunctivae and garlic odor of the sweat.

CONCLUSIONS

The case of Raynaud's disease reported here was caused by arsenic. As arsenic is a frequent contaminant of many articles used for food and other purposes, it should be searched for as the possible etiologic factor in other cases of this syndrome.

123 East Fifty-Third Street.

SUBACUTE BACTERIAL ENDOCARDITIS

A CORRELATION OF THE CLINICAL EVIDENCE OF VALVULAR DEFORMITY WITH THE CONDITION OF THE VALVES AS FOUND AT AUTOPSY *

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One of the most striking features of the clinical picture of subacute bacterial (*Streptococcus viridans*) endocarditis is the frequent occurrence of the disease as a terminal condition in patients suffering from rheumatic endocarditis with chronic valvular deformity. A further point noted is that this infection rarely attacks mitral valves which on clinical examination show evidence of marked stenosis. Clawson,[1] for example, notes among the characteristic pathologic changes "large and villous vegetations on leaflets otherwise normal or thickened from previous inflammation and involvement of the mural endocardium." Levine [2] recently stated that "although mitral stenosis is the most common type of rheumatic valve disease, yet, bacterial endocarditis more frequently develops in patients who have had aortic regurgitation than in those who have had mitral stenosis," and further, that "it is those patients who either have aortic insufficiency or who have a mitral systolic murmur without evidence of mitral stenosis who are the most vulnerable in this regard."

The latter statement is an expression of an opinion which has also been held in the Cardiac Clinic of the Massachusetts General Hospital. To correlate the clinical observations with the autopsy description of the valves in these cases, the following data are presented:

During the period from Feb. 1, 1919, to June 1, 1929, a little more than ten years, twenty cases of subacute bacterial endocarditis were studied at autopsy in the Massachusetts General Hospital. This does not

* From the Cardiac Clinic, Massachusetts General Hospital.

1. Clawson, B. J.: An Analysis of Two Hundred and Twenty Cases of Endocarditis, Arch. Int. Med. **33**: 157 (Feb.) 1924.
2. Levine, S. A.: Some Unproved Impressions Concerning the Subject of Heart Disease, New England J. Med. **198**: 885 (June 14) 1928.

include the cases of terminal valvulitis in septicemias of other cause, but only those in which the clinical and necropsy picture was typical of malignant endocarditis due to an anhemolytic (*viridans*) streptococcus.

The clinical records were reviewed for the description of the character of the heart sounds and murmurs, the evidence of mitral and aortic valve involvement, the rhythm of the heart, the blood culture reports, the duration of the heart disease and the age and sex of the patient.

The description of the heart murmurs was taken from the notes of the cardiac consultant, if possible, or from the notes of the visiting physician or the house officer. The cardiac experience of most of these examiners was known to me personally and it was possible to assess the accuracy of each report. These observations are presented in table 1.

SUMMARY OF TWENTY CASES

Age.—The age range was from 6 to 47 years. One case occurred in the first decade, two in the second, seven in the third, seven in the fourth, and three in the fifth.

Sex.—Eleven patients were males and nine females.

Etiology and Duration of Heart Disease.—These points were possible of estimation in fourteen cases. Existing heart injury could be attributed to rheumatism in nine cases, to chorea in two and to indefinite infections such as tonsillitis and abscessed teeth in four; in five the etiology was unknown. In eleven cases, therefore, an obvious rheumatic background was present. Death occurred in this group from five months to twenty-six years after the known rheumatic infection. The actual time intervals were as follows: five months, two years, four and one-half years, nine years, twelve years, seventeen years, eighteen years, twenty-two years, twenty-three years, twenty-five years and twenty-six years.

Blood Culture.—Blood cultures for *Streptococcus viridans* were reported positive in twelve cases, negative in six cases, and questionable in two cases.

Clinical Diagnosis.—In seventeen cases the diagnosis at discharge was malignant or subacute bacterial endocarditis. The blood culture was reported as negative in two and as questionable in one of the other three cases.

Table 2 gives the diagnoses of valve involvement as stated by the most competent authorities who examined the patients.

Disease of the aortic valve was diagnosed during life in seven cases but at autopsy was found present in eleven. In only one case was the aortic valve found diseased without mitral involvement.

Heart Murmurs.—Systolic murmurs at the mitral area were found in every case except the one with pure aortic regurgitation in which there was questionable mitral disease on physical examination. In twelve cases the systolic murmur was noted as loud. In nine cases, or about half, a mitral diastolic murmur was heard; in only one case was it loud. In four other cases it was questionable. In only two cases was an accentuation of the first sound noted at the apex. In every case, therefore, in which mitral involvement was present, mitral regurgitation was evident clinically, and in nine cases in which mitral stenosis was clinically diagnosed, the mitral systolic murmur was either as loud as the diastolic murmur, or louder. In one case the mitral diastolic murmur was of the Austin Flint type, as no mitral disease was present.

Heart Rhythm.—This was normal except in one patient with marked mitral regurgitation, in whom auricular fibrillation seems to have recurred six months before death at the time of the appearance of the terminal infection, normal rhythm having been restored four years previously by quinidine sulphate.

Electrocardiograms.—In eight cases electrocardiograms were made. In one of these cases the tracing was recorded five years before the terminal illness. It is worth noting, however, that in no instance was right axis deviation (right ventricular preponderance) found, and in two cases left axis deviation was recorded. In

TABLE 1.—*Summary of Cardiac Records*

No.	Name	Sex*	Age	Blood Culture	Mitral Murmurs: Systolic	Mitral Murmurs: Diastolic	Aortic Diastolic Murmur	Cardiac Rhythm	Autopsy Observations: Mitral Valve Circumference	Autopsy Observations: Valves Affected: Mitral	Autopsy Observations: Valves Affected: Aortic
1	G. W. B.	♂	31	No growth	++	0	0	Normal	No deformity	+	0
2	J. M.	♀	37	?	+	+	0	Normal	8 cm.	+	+
3	E. S.	♂	42	No growth	++	0	0	Normal	10 cm.	+	+
4	E. B.	♀	31	No growth	+	6	+	Normal	11 cm.	+	+
5	M. R.	♀	32	Positive	++	0	0	Normal	10 cm.	+	+
6	L. Z.	♀	16	Positive	++	+	0	Normal	Narrowed only by vegetations	+	+
7	J. B.	♂	33	No growth	+	+	0	Normal	13½ cm.	+	0
8	V. J.	♀	23	No growth	+	?	0	Normal	9½ cm.	+	0
9	H. B.	♂	51	No growth	?	Austin Flint	+	Normal	10 cm.	0	+
10	A. V.	♂	23	Positive	++	?	+	Normal	12 cm.	+	+
11	J. K.	♂	42	Positive	+	?	+	Normal	11 cm.	+	+
12	W. G.	♂	6	?	++	0	0	Normal	7 cm.	+	0
13	R. D.	♀	15	Positive	++	+	0	Normal	8 cm.	+	0
14	E. Z.	♀	39	Positive	+	0	0	Normal	10 cm.	+	0
15	L. B.	♀	25	Positive	+	?	+	Normal	10 cm.	+	+
16	M. F.	♀	28	Positive	++	+	0	Normal	9½ cm.	+	0
17	E. D.	♂	47	Positive	++	0	+	Normal	Normal	Slight thickening	+
18	M. M.	♂	24	Positive	++	+	0	A. F.	15 cm.	+	0
19	C. A.	♂	22	Positive	++	+	+	Normal	9 cm.	+	+
20	J. O.	♂	30	Positive	++	++	0	Normal	11 cm.	+	0

* In this column, ♂ indicates male; ♀, female.

TABLE 2.—*Diagnoses of Valve Involvement*

Mitral regurgitation	4
Mitral stenosis	1
Mitral regurgitation and stenosis	8
Aortic regurgitation	1
Aortic regurgitation and mitral regurgitation	2
Aortic regurgitation and mitral regurgitation and mitral stenosis	2
Aortic regurgitation and mitral stenosis	2
Total	20

four cases the auriculoventricular conduction time was prolonged more than 0.2 second, and in two cases there was evidence of delay in intraventricular conduction. The electrocardiographic records are further proof of the infrequency of long standing mitral stenosis.

Pathologic Changes.—In table 1, figures are given for the circumference of the mitral valve ring. It must be admitted that this is only a rough guide of the amount of stenosis present; yet in this instance the measurements are significantly in favor of there being no important narrowing of the base of the valve. In no case (except in the child of 6 years with a valve circumference of 7 cm.) was the mitral ring smaller than 8 cm.; in eleven cases it was 10 cm. or more in circumference, and in one case it measured 15 cm. The vegetations themselves on the leaflets may produce a rather acute narrowing, as in case 6, and in other cases may have been responsible for the mitral diastolic murmurs that were heard.

Three cases of bacterial endocarditis in which narrowing of the mitral valve was obvious from the postmortem examination presented features which caused me to omit them from the present series. In none of these was the blood culture positive. In one, the terminal illness was of only twelve days' duration and the picture was one of an acute process engrafted on chronic mitral disease. The second patient died of congestive heart failure with auricular fibrillation, and the following description of the mitral valve was given: "At one place, along a length of 2 cm. there is much fibrocalcareous degeneration, on the superior surface of which there is a small, brownish red, soft, granular, thrombotic mass, which is weakly adherent." This was evidently a late, acute process in a patient with terminal myocardial failure from rheumatic endocarditis. The third patient was also sick for only twelve days and showed a vegetative mass on the mitral valve, which was noted as presenting only "some fibrous thickening and thickening of the chordae tendineae," from which a cerebral embolus had evidently been dislodged.

COMMENT

In the study of a disease such as malignant endocarditis, which in its complete form is practically always fatal, any information helping in the diagnosis is desirable. It constitutes the terminal condition in a considerable number of patients with rheumatic heart disease. The data presented here show that certain victims of rheumatic carditis are more likely to acquire this secondary or modified infection. From these figures, a typical patient may be postulated: a woman between the ages of 20 and 40, who has had a rheumatic infection about fifteen years previously, and in whom cardiac examination reveals a loud apical systolic murmur, with perhaps a slight mid-diastolic rumble at the apex, without any marked accentuation of the first sound, with or without evidence of early aortic regurgitation, and with a normal cardiac rhythm.

This is not the description of a patient with marked mitral stenosis with a loud sharp first heart sound, a loud mid and late diastolic mitral murmur and a relatively slight apical systolic murmur. Such a patient is much less likely to suffer from malignant endocarditis.

Why this is so is not known. It has been suggested that the rigid calcified valves of chronic mitral stenosis are less favorable ground for superimposed bacterial infection than those seen in malignant endocarditis, being subjected to less trauma since the cusps can no longer shut and so cannot strike their abnormal surfaces against one another. It is also possible that the factors responsible for the healing and calcification of valves are not active in the latter cases and that the protective antigenic agents are likewise not elaborated for defense against *Streptococcus viridans.* That some other factor is of importance is, however, suggested by the knowledge that this infection is much less common in childhood at the time when rheumatic carditis is prevalent and affected mitral valves are not healed or calcified.

CONCLUSIONS

1. Twenty cases of subacute (*Streptococcus viridans*) endocarditis have been studied in order that the description of the mitral valves at autopsy might be compared with the clinical account of the murmurs present during life.

2. In all the cases in which the mitral valve was affected (nineteen) there was a systolic murmur which was noted as loud in one half. In nine cases a mitral diastolic murmur was heard, but in only one case was it loud and in this case there was a loud systolic murmur also. The first heart sound was described as loud in only two cases.

3. The pathologic examination showed that well marked constriction of the mitral valve is uncommon, the circumference being 8 cm. or larger in all adolescent and adult patients of this series (nineteen). In eleven cases of the series of twenty, the aortic valve was involved.

4. Patients with rheumatic heart disease in whom mitral regurgitation persists without the development of evidence of mitral stenosis of marked degree are more likely to acquire subacute bacterial endocarditis than are those in whom the valve becomes obviously stenotic within a few years.

5. In cases of questionable malignant endocarditis the presence of this disease should be more seriously suspected if mitral regurgitation is noted as a prominent clinical finding than if well marked mitral stenosis is present.

270 Commonwealth Avenue.

Subtle Influences of Environment.—Marked differences exist in the psychic patterns of the gastric ulcer and gallbladder disease groups. Indeed, they are as definite as any differences which have appeared in the morphologic panel. Furthermore, it should be noted that combinations and overlappings of the qualities in the psychic patterns are found just as they were in the morphologic panel. Such gradations were frequently met in the morphologic studies. But they seem to be perhaps more frequent or at least less well defined in the psyche. Notwithstanding, however, the difficulty of precise focus in the task of envisaging the impondcrable elements of personality, it is none the less possible by this method to gather and project a useful conception of the nature of the psychologic panel. But it should be remembered that it is quite impossible to conceive of a living organism apart from its environment. Indeed, the whole purpose of living matter is expressed in its perceptive powers and reaction capacities. Consequently, these can have no meaning nor can their nature be discovered unless the details of the surroundings with which they engage are known. It is impossible to judge, even remotely, of a man's character unless we can analyze his reactions to the subtle influences of the environment in which we observe him. We are, therefore, driven to contemplate the details of that environment with the same sagacity as we do the man himself.—Draper, George: Disease and the Man, New York, Macmillan Company, 1930, p. 182.

MENINGITIS (STAPHYLOCOCCUS AUREUS) SECONDARY TO FRONTAL SINUSITIS

OPERATION AND RECOVERY

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A number of recoveries from meningitis have been reported in the literature, but in cases in which the diagnosis of a suppurative meningitis has been substantiated by the recovery of the causative organism in two or more lumbar punctures, the number of reputed recoveries is greatly lessened.

Kolmer,[1] in writing of pneumococcic and streptococcic meningitis, said that "the mortality of diffuse spreading types with purulent cerebrospinal fluid is nearly 100 per cent." Previously [2] he said stated that, in the two instances in which he has seen recoveries, the organisms were later identified as the meningococcus.

Neal,[3] in 1924, found only five instances of recovery following streptococcic meningitis.

Lamar,[4] in 1912, collected thirteen reports of cures in pneumococcic meningitis.

Eagleton,[5] in 1921, in an analysis of the reported recoveries from suppurative meningitis in which the diagnosis was substantiated by finding organisms in the cerebrospinal fluid, collected only thirty-one cases (including his own). In these thirty-one cases there was some doubt as to the organism being a meningococcus in six or sufficient data clearly to prove the case a suppurative meningitis.

The Goldsteins [6] in 1927, after a review of the world literature, estimated that there had been about 150 cases of recovery from pneumococcic meningitis.

References in the literature to staphylococcic meningitis are rather meager, probably because of the comparative infrequence of its occurrence.

Neal,[3] in 1924, examined a list of 1,535 cases of purulent meningitis. The most frequent causative organisms in the order named were meningococcus, pneumococcus, streptococcus, influenza bacillus, staphylococcus and *Bacillus coli*. Cases due to the last two organisms were found to be comparatively rare.

There seems to be a general impression that a purulent meningitis due to a streptococcus is more virulent than one due to a staphylococcus. Perusal of the literature fails to offer evidence for or against this impression. Dandy [7] attributes more importance to the virulence of the organism than to its type. Recoveries from staphylococcic meningitis have been reported by Dandy,[7] Moise,[8] Lortat-Jacob and Grivot,[9] Salvini,[10] Emerson,[11] Wharry [12] and probably others.

RECORDS OF CHILDREN'S MEMORIAL HOSPITAL

An examination of the records of all cases of meningitis (exclusive of tuberculous meningitis) seen in the Children's Memorial Hospital for the years 1909 to August, 1929, reveals a total of 297 cases, of which 273 were epidemic meningitis, leaving twenty-four cases (excluding my own) of septic meningitis. In all but one of the twenty-four cases of septic meningitis, death occurred in from one to fifteen days. This one patient (case 2) was taken from the hospital without permission in a dying condition. The final outcome is not known. The ages varied from 12 days to 8 years. There were fifteen girls and nine boys.

The white blood cell counts were recorded in fourteen cases. They varied from 3,250 to 58,800, giving an average of approximately 22,000.

The cell counts of the spinal fluid taken by lumbar puncture were recorded in nineteen cases (one case marked many). They varied from 210 cells to 14,400. An average of these counts gives a figure of about 3,800. There were only four of the fatal cases in which the count exceeded 10,000. In four other fatal cases the highest count recorded was 600 cells. The average of 3,800 cells seems rather low in view of the severe types of meningitis found. The cell count in epidemic meningitis frequently runs much higher.

A culture of the spinal fluid was recorded in twenty-three cases. An organism was obtained in one or more cultures during life in twenty-one cases. In the two cases in which an organism was not demonstrated during life, an organism was obtained from a culture taken at autopsy. A streptococcus was responsible in thirteen instances. Of the thirteen cases, *Streptococcus hemolyticus* was demonstrated in seven instances and *Streptococcus viridans* in one case. In one case in which the final diagnosis was *Streptococcus hemolyticus* meningitis, the organism was not recorded. In the remaining five cases the type of the streptococcus was not mentioned. A pneumococcus was found in ten cases. In the one case that was typed, a pneumococcus type IV was found.

A culture of the blood was recorded in five cases. In four instances a positive report was obtained. In one patient (case 12) with a streptococcic meningitis, a negative report was received from the blood culture taken at autopsy. All the positive blood cultures showed the same organisms that were found in the spinal fluid. A pneumococcus was demonstrated in two cases and *Streptococcus hemolyticus* in two cases. It is an interesting speculation whether the blood stream infection usually precedes the meningitis or follows it.

An interesting phase to the otolaryngologist is that of determining, when possible, the probable original focus. A definite infection of the ears immediately preceded or accompanied the infection in thirteen cases. These ear infections were preceded obviously by a nose or throat infection. A nose infection without ear involvement was recorded in seven cases. In one instance, the ethmoid sinus was found to contain pus at autopsy. One case was secondary to a nasal infection with an erysipelas. Another case was secondary to measles with an ear infection. A third case followed an eye injury. A pneumonia with an ear infection was present in three cases and a pneumonia without an ear infection in one instance. A possible original focus could not be determined in one child. No case of staphylococcic meningitis was found.

REPORT OF CASE

R. L., a boy, aged 6 years, was admitted to the Children's Memorial Hospital, Aug. 17, 1929, because of headache, fever, convulsions and swelling of the forehead and left eyelid.

1. Kolmer, J. A.: Pneumococcus and Streptococcus Meningitis, J. A. M. A. **92**: 874 (March 16) 1929.
2. Kolmer, J. A.: Chemotherapy and Serum Therapy of Pneumococcus and Streptococcus Meningitis, Arch. Otolaryng. **3**: 491 (June) 1926.
3. Neal, Josephine B.: Meningitis, J. A. M. A. **82**: 1429 (May 3) 1924.
4. Lamar, R. V.: J. Exper. Med. **16**: 581, 1912.
5. Eagleton, W. P.: Tr. Am. Otol. Soc., 1921.
6. Goldstein, H. L., and Goldstein, H. G.: Internat. Clin. **3**: 155 (Sept.) 1927.
7. Dandy, W. E.: Surg. Gynec. Obst. **39**: 760 (Dec.) 1924.
8. Moise, T. S.: Surg. Gynec. Obst. **42**: 394 (March) 1926.
9. Lortat-Jacob, L., and Grivot, M.: Bull. et mém. Soc. méd. d. hôp. de Paris **44**: 1555 (Dec. 17) 1920.
10. Salvani, C.: Pensiero med. **17**: 263 (May 15) 1928.
11. Emerson, Kendall: Boston M. & S. J. **196**: 465 (March) 1927.
12. Wharry, H. M.: Brit. M. J. **1**: 85 (Jan. 16) 1926.

The illness began two days before admission with a frontal headache and a purulent discharge from the nose, worse on the left side. The nose had been discharging a mucopurulent secretion for the past month. The child was said to have had sinusitis. The day before admission he began to have some swelling above the bridge of the nose and in the midline of the forehead accompanied by a high fever. In the evening jerking began, followed soon by general convulsions. These convulsions lasted about two hours until relieved by packs and chloral. Vomiting did not occur.

The spinal fluid was turbid and under moderate pressure with a two plus positive Pandy test. The cell count was 320, with 96 per cent polymorphonuclears and 4 per cent lymphocytes. Cultures of the spinal fluid taken at this time showed gram-positive staphylococci which on further growth proved to be *Staphylococcus aureus*.

The following day the child's condition was worse with increased stiffness of the neck and increased swelling and tenderness of the forehead and upper left eyelid. He was irrational at times. Positive Brudzinski and positive bilateral

TABLE 1.—*Records of All Cases of Meningitis Seen in Children's Memorial Hospital*

Case	Date	Sex*	Age	Cell Count in Spinal Fluid	Culture of Spinal Fluid	Culture of Blood	White Blood Count	Result	Autopsy	Diagnosis	Probable Original Focus
1	6/15/20	♀	6 yr.	4,000	Streptococcus	Not taken	10,500	Died 3 days	No	Streptococcus meningitis	Not found
2	2/19/22	♂	2 yr.	2,000 to 4,800	Pneumococcus	Not taken	.....	Unknown; left hospital	No	Pneumococcus meningitis	Head cold
3	1/ 5/26	♀	1 yr.	.....	Streptococcus	Not taken	.....	Died 10 days	No	Streptococcus meningitis	Head cold
4	2/20/26	♀	5 yr.	320	Streptococcus hemolyticus	Not taken	.....	Died 4 days	No	Streptococcus meningitis	Acute middle ear infection
5	3/27/26	♂	5 mo.	840 to 14,400	Streptococcus hemolyticus	Streptococcus hemolyticus	.....	Died 12 days	No	Streptococcus meningitis	Head cold and middle ear infection
6	3/29/26	♀	1 yr.	400 to 10,000	Streptococcus hemolyticus	Not taken	22,000	Died 12 days	Extensive streptococcus hemolyticus meningitis	Streptococcus hemolyticus meningitis	Acute nose and throat infection with erysipelas
7	4/30/26	♂	2 mo.	320	Streptococcus hemolyticus	Not taken	.....	Died 15 days	No	Streptococcus hemolyticus meningitis	Red throat, post-nasal mucus
8	1/ 6/27	♂	8 yr.	Many	Pneumococcus	Not taken	.....	Died 1 day	No	Pneumococcus meningitis	Acute middle ear infection 1 week ago
9	3/25/27	♀	1 yr.	700 to 2,500	Pneumococcus	Not taken	3,250	Died 2 days	Pneumococcus meningitis a. s. o. m. bilateral	Pneumococcus meningitis	Cough preceded illness
10	4/ 3/27	♂	5 mo.	.....	Pneumococcus	Not taken	7,500	Died 1 day	Pneumococcus meningitis	Pneumococcus meningitis	Bloody discharge in right auditory canal
11	4/22/27	♀	7 yr.	210 to 1,800	Streptococcus hemolyticus	No report	19,000	Died 9 days	Streptococcus hemolyticus meningitis pus in left ethmoid	Streptococcus meningitis	Nose cold and cough
12	1/30/28	♀	11 yr.	2,800 to 3,820	Streptococcus hemolyticus	Negative	45,000	Died 1 day	Streptococcus hemolyticus and staphylococcus meningitis	Streptococcus hemolyticus meningitis	Head cold and acute middle ear infection
13	2/ 8/28	♀	4 mo.	.....	Pneumococcus	Not taken	25,400	Died 3 days	No	Pneumococcus meningitis	Cough; acute middle ear infection
14	2/11/28	♀	3 mo.	460	Streptococcus	Not taken	.....	Died 1 day	No	Streptococcus meningitis	Pneumonia and acute middle ear infection
15	2/14/28	♂	7 mo.	400 to 600	Pneumococcus	Pneumococcus	17,500	Died 1 day	Pneumococcus meningitis and pneumonia	Pneumococcus meningitis	Pneumonia, red throat and red ear drums
16	4/ 5/28	♀	7 mo.	3,000	Pneumococcus	Not taken	14,400	Died 2 days	No	Pneumococcus meningitis	Red throat and injected ear drum
17	4/ 8/28	♂	5 yr.	1,440	Streptococcus	Not taken	23,200	Died 2 days	No	Streptococcus meningitis	Cold
18	4/24/28	♀	8 mo.	2,300	Pneumococcus	Not taken	5,000	Died 2 days	No	Pneumococcus meningitis	Coryza; blood in right auditory canal
19	11/ 7/28	♂	5 yr.	710 to 6,240	Pneumococcus type IV	Not taken	36,400	Died 2 days	Pneumococcus meningitis	Pneumococcus meningitis	Injury to orbit (stick)
20	11/11/28	♀	2 mo.	12,000	Pneumococcus	Pneumococcus	.....	Died 1 day	Pneumococcus meningitis mastoiditis	Pneumococcus meningitis	Acute middle ear infection; mastoiditis
21	1/ 7/29	♂	20 days	.....	Streptococcus	Not taken	.....	Died 1 day	Streptococcus hemolyticus meningitis	Streptococcus hemolyticus meningitis	Pneumonia; red throat; influenza in home
22	2/12/29	♀	5 yr.	1,435 to 14,000	Streptococcus hemolyticus	Streptococcus hemolyticus	58,800	Died 3 days	Streptococcus hemolyticus meningitis	Streptococcus hemolyticus meningitis	Acute middle ear infection
23	3/29/29	♀	7 yr.	.....	No record	Not taken	17,200	Died 1 day	No	Streptococcus hemolyticus meningitis	Acute throat infection; earache past month
24	6/13/29	♀	8 yr.	4,480	Streptococcus viridans	Not taken	.....	Died 1 day	No	Streptococcus meningitis	Measles; acute middle ear infection

* In this column, ♂ indicates male; ♀, female.

The past history was negative except for an attack of diarrhea and vomiting one month before the present illness.

On physical examination the child appeared well nourished but very irritable and febrile. The ears, chest and abdomen were normal. A diffuse, brawny, tender swelling, without redness or fluctuation, was present over the middle and lower portion of the forehead and the upper part of the nose and left upper eyelid. Rigidity of the neck was present; Brudzinski's sign was absent, and knee jerks were not elicited. The Kernig sign was positive, the Babinski not constant; ankle clonus was not present.

The blood count was 16,400, with 88 per cent polymorphonuclears and 12 per cent lymphocytes.

Kernig signs were present. Ten cubic centimeters of concentrated antimeningococcus serum was given.

The following day (August 19) I saw the child in consultation with Drs. P. F. Morf and G. P. Weiler, who had referred the patient to me. As his condition was growing worse and the signs of the meningitis were increasing, it was decided that he might have a slim chance if the left frontal sinus was opened externally with removal of the inner bony table to establish drainage from the probable point of entrance of the infection to the meninges. This was done the following day. The left frontal sinus was filled with a thick yellow pus. The mucous membrane lining the sinus was detached and appeared to be partly destroyed. After the inner

table of the frontal sinus was removed, the same yellow thick pus escaped from the dura with a more or less continuous flow. Cultures of this pus yielded *Staphylococcus aureus*. The right frontal sinus was opened by removing the septal wall separating the two sinuses. Pus was found also in the right frontal sinus. Cigaret drains were stitched in the wound, one drain going to the right frontal sinus and another drain to the dura. The wound was not closed. Lavage of the brain was not used at the operation or subsequently. The general postoperative condition was good.

Cultures taken from the frontal sinus, from the dura, from the blood and from the nose at various times all showed *Staphylococcus aureus*.

Three days after the operation, pneumonia developed in the left lower lobe with later involvement in the right lower

Analysis of the blood, September 3, on the thirteenth postoperative day, showed: nonprotein nitrogen 25 mg. per hundred cubic centimeters of blood; uric acid 1.5 mg.; cholesterol 210 mg., and creatinine 1.4 mg.

On this date two fluctuating elevations, about 38 mm. in diameter, developed over the occipital region and over the parietofrontal region, which on incision proved to be abscesses containing a large amount of thick yellow pus. A pure culture of *Staphylococcus aureus* was obtained from each abscess. A few days later a third abscess occurred in the left parietal region which also showed *Staphylococcus aureus*. Roughened bone could be felt under each abscess. The abscesses were probably due to an osteomyelitic process. One scalp abscess is still draining with a diminishing discharge at the present date (Nov. 1, 1929).

TABLE 2.—*Course of Infection in Case Reported by Author*

Date	Spinal Fluid Cells	Polymorphonuclears, per Cent	Spinal Fluid Organisms	White Blood Cells	Polymorphonuclears, per Cent	Blood Culture	Pandy Test	Clinical Course
8/17/29	320	96	Staphylococcus aureus	16,200	88	.....	++	Spinal fluid turbid, moderate pressure; convulsion; positive Kernig sign; stiff neck; temperature, 102 F.; purulent nasal discharge
8/18/29	.....	..	.....	.....	..	.....	..	Increased meningeal symptoms; positive Brudzinski sign; temperature, 105.2 F.; swelling of orbit and forehead worse
8/19/29	260	..	Staphylococcus aureus	.....	..	.....	+	10 cc. antimeningococcus serum given; patient irrational at times
8/20/29	.....	..	.....	.....	..	.....	..	Frontal sinuses opened and dura drained
8/22/29	.....	..	.....	.....	..	.....	..	Signs of pneumonia in left lower lobe; rational at times; thick pus draining from dura
8/25/29	130	68	Gram-positive bacilli and Staphylococcus aureus	32,400	84	.....	+	Pneumonic process extends to anterior axillary line; oxygen tent; signs of meningitis persisting
8/27/29	.....	..	.....	.....	..	Gram-positive diplococcus and Staphylococcus aureus	..	Pus cells in urine; smear and culture from dural pus shows Staphylococcus aureus in pure culture
8/28/29	.....	..	.....	.....	..	.....	.	Pains in right eye; meningeal cry when asleep; stiff neck and positive Kernig sign still present
8/30/29	610	84	Staphylococcus aureus	.....	..	Staphylococcus aureus	+	Localized pneumonic process in right axillary region; left side much improved
9/ 2/29	.....	..	.....	.....	..	.....	..	Two fluctuating elevations (38 mm. in diameter) on parietal and occipital region incised; culture shows pure growth of Staphylococcus aureus
9/ 5/29	410	82	Negative	12,200	72	Negative	++	Hemoglobin 60 per cent; red cells, 3,352,000; temperature, 104 F.
9/ 9/29	.....	..	.....	.....	..	.....	..	Positive Brudzinski and positive Kernig and Babinski signs on right side; vomiting; 280 cc. of father's blood given intramuscularly
9/11/29	3,350	94	Staphylococcus aureus	15,100	..	.....	+++	Right pupil dilated; does not react to light; eyeball immovable; papilledema; general condition improved
9/13/29	.....	..	.....	19,400	60	.....	..	Pneumonia clearing; seen by Dr. Ralph Hamil (neurologist); signs of meningitis clearing
9/16/29	.....	..	.....	16,400	73	.....	..	Chest clear; eyeball and pupil still paralyzed; third parietal abscess incised; Staphylococcus aureus from culture
9/25/29	.....	..	.....	15,900	..	.....	..	Frontal and scalp wounds still draining but less in quantity
10/ 5/29	.....	..	.....	9,000	..	.....	..	Sitting up in bed; eats and sleeps well; feels much better; paralysis of eyeball and pupil still persisting
10/ 7/29	.....	..	.....	.....	..	.....	..	Can read large print with right eye; left
11/ 1/29	.....	..	.....	.....	..	.....	..	Feels fine; is walking; no change in right eye; frontal sinus wound healed; slight drainage from one of the scalp abscesses; meningitis entirely cleared
2/21/30	.....	..	.....	.....	..	.....	..	eye normal; dismissed from hospital Normal in every way except right eyeball still paralyzed; slight discharge of serous pus from one scalp abscess

axillary region. The pneumonia was probably of a metastatic or a hypostatic type.

A day or so later a profuse discharge of pus was obtained from beneath the outer portion of the upper eyelid, probably a burrowing of pus from the left frontal sinus. The spinal fluid continued to show the staphylococcic organism (with the one exception noted in table 2) each time a spinal puncture was made up to and including September 11 (three weeks after the operation).

The cell count varied from 260 to 3,350. In the instance in which the cell count was 3,350, the polymorphonuclear cells were 94 per cent and the lymphocytes 6 per cent, which was about the proportions held throughout, with a slight relative increase in the lymphocytes at times.

The highest white blood cell count was 32,400, taken August 25, five days after the operation.

In the three instances in which blood cultures were taken, positive cultures of *Staphylococcus aureus* were obtained twice. The first negative blood culture was found nineteen days after the operation.

The patient was semicomatose, drowsy and irrational at times during most of his illness, with occasional attacks of vomiting. Headaches were complained of frequently. Many times he would waken with a loud cry (meningeal cry).

September 11, or the twenty-first postoperative day, he suddenly developed a complete paralysis of all the muscles of the right eye with a dilated pupil which did not react to light. He could count fingers with this eye and later could read larger type. There was some question whether a slight choking of the disk was present or not. The paralysis of the pupil and of the muscles of the right eye has continued to date with some improvement. However, all evidence of sepsis

has disappeared. He has no other evidence of a mental or physical defect with the exception of a slight discharge from one of the scalp abscesses (Feb. 21, 1930).

COMMENT

The question arises whether we were dealing with a circumscribed suppurative or a diffuse suppurative meningitis. I am of the opinion that it was a diffuse suppurative meningitis because of the persistence of the meningeal signs with long continued stupor and delirium; because of the cell count reaching as high as 3,350 with a marked relative increase of the polymorphonuclear cells, and, most important of all, because of the persistent and long continued positive spinal fluid cultures.

Yerger [13] found the presence of bacteria in the cerebrospinal fluid the best clinical evidence of a diffuse process.

Greenfield and Carmichael consider a large number of organisms in the smear and in the spinal fluid culture as indicating an impending diffuse meningitis.

Most writers consider cell counts of 1,000 or under with or without a positive spinal fluid culture and without marked meningeal symptoms as not necessarily meaning a diffuse meningitis.

Most reported cases of cured meningitis are those classified as circumscribed meningitis with a low cell count, frequently with an excess of lymphocytes, and with or without organisms.

A brain or an extradural abscess may present the picture of a normal spinal fluid or it may resemble a circumscribed meningitis with a low cell count, with or without organisms. Yerger [13] found the cell count to be under 400 in 83 per cent of his reported cases of brain abscess confirmed by autopsy or operation. Eagleton states that it is apt to be high in the beginning with a drop to as low as 250 in the later stages as the process becomes walled off.

In the case reported here the boy presented the picture of a double frontal sinusitis with suppurative meningitis (*Staphylococcus aureus*) complicated by bronchopneumonia and multiple abscesses of the scalp, probably of osteomyelitic origin, with septicemia, with drainage of the brain through the probable site of the origin of the infection, and with recovery.

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13. Yerger, C. F.: Acute Toxic Meningo-Encephalitis of Otorhinogenic Origin, Arch. Otolaryng. **1**: 198 (Feb.) 1925.

The Potential Neurotic.—It has long been surmised that certain psychoses were due to errors in development—indeed, with idiocy it is obvious—but the investigations of psychoanalysis have been able to establish this as a general proposition. What is termed "fixation," with the closely allied "regression," is a fundamental concept in psychoanalysis, and from this point of view it may fairly be said that all mental morbidity signifies an arrest in development. A potential neurotic or psychotic is some one who still carries about with him a conflict which is normally solved in infancy; he is some one who has never successfully passed a given stage of infantile development. Various precipitating factors decide whether this state of affairs will come to expression in the form of symptoms early or late in life. The relation between the arrest in ontogenetic development and particular difficulties in the phylogenetic history of humanity opens up a fascinating chapter, to which psychoanalysis has already made promising contributions. To sum up the three considerations just advanced, psychoanalysis has provided psychiatry with an interpretation, a dynamic and a genetic point of view.—Jones, Ernest: Psychoanalysis and Psychiatry, *Psychiatric Quarterly*, January, 1930, p. 90.

EXPERIMENTAL CHROMIUM DERMATITIS *

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One of the hoary traditions of industrial hygiene is that chromium compounds will not attack the unbroken skin. In view of the increasing use of chromium through the advent of chromium plating, stainless steel and photolithography, all resulting in increased exposure to chromium, it becomes desirable to point out the error in the assumption that a break in the integument is requisite to chromium action. In the past, chromium dermatoses with a preinjured skin have been described, but these statements have been effectively overshadowed by the repeated implication that an injured skin is a necessary forerunner to chromium action.

This situation is largely due to confusion between "chrome holes" and chromium dermatitis. The deep undermining "chrome hole" is nearly always preceded by a break in the integument, while the superficial dermatitis may follow direct irritation of normal skin. In support of this attitude we present observations from the experimental application of potassium bichromate, ammonium bichromate and chromic acid to the apparently normal skin of thirty-seven male workers.

CHROMIUM IN LITHOGRAPHY

Chromic acid and its salts have been in common use in the lithographic industry for many years. Their irritating and toxic properties have been recognized, and a more or less continuous campaign has been carried on against their use, but with only partial success. Chromic acid is still an important factor in lithography and is thought to be indispensable in many shops. Substitutes have been found, but the majority of lithographers still contend that nothing can approach the effectiveness of chromic acid in lithographic etches for zinc.

Photolithography is based on the property which bichromate-colloid mixtures have of becoming insoluble when exposed to light. No satisfactory substitutes for bichromates or chromates in this process have been found. Photolithography is rapidly gaining in favor, with the result that more and more workmen come in contact with the materials involved.

The following is a description of the lithographic applications of chromic acid and its salts:

Etching.—This is the process of desensitizing the nondesign parts of the lithographic printing plate. Both zinc and aluminum plates are used. The etching solution is applied after the plate has received the greasy design, and before it goes to press. This may be done by the artist, the transferrer or the photolithographer, depending on the type of plate involved. Corrections or changes in the design after the plate has gone to press are sometimes made by the pressman with the aid of etches. Tinting and scumming of the plate on the press call for occasional re-etching, which is also done by the pressman.

A typical zinc etch consists of 32 ounces of gum arabic solution (from 4 to 6 ounces of the dry gum);

* The data with reference to chromium in lithographic technology were supplied by Robert F. Reed of the Lithographic Technical Foundation.

1 ounce of 50 per cent chromic acid solution, and three-fourths ounce of 85 per cent phosphoric acid solution. This solution is applied to the plate with a brush or sponge and almost invariably comes in contact with the hands of the user. Rubber gloves have been tried, but carelessness usually counteracts their value as a preventive measure.

Dampening.—This is the process of applying moisture to the plate during the printing operation. It is usually found that, in order to keep the nondesign parts of the plate clean, a little etching solution must be added to the dampening water. For this purpose the etch prepared according to the foregoing formula may be added in the proportion of from ½ to 2 ounces to each gallon of water. Ammonium bichromate is sometimes substituted for chromic acid in the etch when it is used for this purpose. Chromic acid and the chromates are seldom used in the dampening water in connection with aluminum plates, but by far the larger proportion of lithography is done from zinc plates.

Photolithography.—In the preparation of the printing design on lithographic plates by photographic means, the usual procedure is to coat the plate on a whirler with a solution, typical formulas of which are: (1) 3 ounces of egg albumin scales dissolved in 22 ounces of water; (2) 1 ounce of ammonium bichromate dissolved in 10 ounces of water. In many shops, enough ammonia is then added to convert the ammonium bichromate to ammonium chromate. This reduces the tendency of the dried coating to become insoluble spontaneously, but the light sensitivity is retained.

In all of these processes, with the exception of etching the plate while on the press, and occasional applications of the dampening solution, contact of the solutions with the skin can be avoided. Since many workmen seem to handle these solutions without apparent harm to the skin, it is difficult to inspire care in their use. Occasionally, individuals suffer from skin eruptions apparently due to the effects of chromates or of chromic acid. These reactions are the basis of the demand that the use of these materials be discontinued.

EXPERIMENTAL PROCEDURES

For the purposes of this study we sought thirty-seven volunteers in industries in which chromium may be utilized in the trade practices entailed. Twenty-five were found among lithographers and twelve among tanners. The majority of the lithographers had been exposed to the action of chromium at some time during their work life but at the time of the investigation (with one exception) were free from any demonstrable defects attributable to chromates. Five of the lithographers reported that at some time in the past they had suffered from chromium action in some form. No known exposure had been the lot of the volunteering tanners, as chrome tanning is no longer practiced in that tannery.

To the normal skin of the lithographers were applied gauze dressings saturated, respectively, with 1 and 4.5 per cent potassium bichromate solutions, and water as a control. Rubber tissue covers were utilized to prevent evaporation.

Some evaporation under this rubber tissue dressing necessarily takes place among men at work. The use of metal caps tightly strapped on the skin likewise permitted some evaporation. At the end of twenty-four hours the dressings were removed and the results recorded. Forty-eight hours later a second observation was made as to the skin condition at that time.

In like manner, applications were made to the arms and forearms of tanners; namely, ammonium bichromate 4.5 per cent, chromic acid 0.5 per cent, and a control consisting of monosodium phosphate, phosphoric acid and water in such proportions as to provide a p_H of 3.8, which is approximately that of a 4.5 per cent solution of ammonium bichromate.

RESULTS

Twenty of twenty-five lithographers, to whose normal skin 1 and 4.5 per cent potassium bichromate solutions were applied for twenty-four hours, exhibited inflammation not found in control tests.

Ten of twelve tannery workers exhibited a dermatitis produced within twenty-hour hours on normal skin as a result of the action of ammonium bichromate.

Four of twelve tannery workers exhibited a trivial papular dermatitis as a result of the action of 0.5 per cent chromic acid applied to normal skin.

None of twelve tannery workers exhibited any manifestations of injury to the skin following applications of a control solution with a p_H approximating that of 4.5 per cent ammonium bichromate.

Four of twenty-five lithographers presented vesication as a result of the action of potassium bichromate, while no vesication followed applications of ammonium bichromate in equal strengths under similar conditions.

CONCLUSIONS

Chromic acid, potassium bichromate and ammonium bichromate in solutions may readily produce skin irritation without the necessity of any previous injury.

34 West Seventh Street.

PRIMARY LUNG TUMOR

REPORT OF SIX CASES WITH NECROPSIES *

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Cancer is so common in occurrence, so widespread in distribution, so varied in manifestations, that it is important to the clinician, whatever his line of work may be. The general opinion that primary lung tumors are among the rare forms of cancer has persisted for centuries. Today, however, primary lung tumors are being reported in increasing numbers. The internist desires to make an early and accurate diagnosis in order that the surgeon may develop his technic for the removal of primary lung cancer.

ETIOLOGY

In regard to the etiology of cancer of the lung, many questions arise. There is, for instance, the classic frequency among the cobalt miners of the Schneeberg district in Saxony.[1] For centuries these miners have been reported as dying in large numbers from malignant tumors of the lung, while people living in the same area but not working in the mines did not show any increased incidence. In 1926 the Committee on Cancer Research in Saxony studied 154 Schneeberg miners. During the last four years twenty-one of these men died and thirteen of them were found to have carcinoma of the lung at necropsy. During this investigation 362 individuals from the same neighborhood but who were not employed in the mines were also examined roent-

* From the Albert Steiner Clinic and the Roberts Clinic.
* Read before the Fulton County Medical Society, April 5, 1929.
1. Weller, C. V.: The Pathology of Primary Carcinoma of the Lung, Arch. Path. **7**: 478 (March) 1929.

genographically, and in none of them was a condition resembling lung tumor found. It was also noted that the lungs of the miners showed a constant though varying amount of pneumonokoniosis, arising no doubt from the stone dust. The dust and the air of the mines are both radioactive. Berblinger [2] states that the fact of the regional frequency of lung cancer remains. However, cancer has not been frequently reported in conjunction with cases of pneumonokoniosis in other places than in the Schneeberg district.

Chronic irritation may be considered one of the principal factors in the production of lung cancer. Some have believed the dusty air, the presence of gases from automobiles, the use of tobacco and the inhalation of particles of tar from the road beds to be possible etiologic factors. Konrad and Franke [3] state that in Riga there has been a definite increase but that there has not been a coincident increase of automobiles and the use of tar in road building. Thus these factors could not account for the increase of lung cancer in this locality. Chronic irritation from such diseases as bronchitis, influenza and tuberculosis may in some cases be a forerunner of cancer. Among my six patients one had influenza, one a lung abscess, and one chronic bronchitis for years. Of the twenty-four patients reported on by Klotz,[4] ten had chronic diseases of the chest, including influenza, asthma, tuberculosis and chronic bronchitis. Of Adler's [5] patients five had bronchitis, seven syphilis, six tuberculosis, three influenza and three pneumonia. In thirteen of Adler's 464 cases of malignant diseases of the lung, there was a family history of cancer. Certainly an increase has come and numerous authors have accepted the influenza epidemic as the most probable explanation, among them Berblinger.[2] Staehelin [6] points out that "in many statistics the rise of the lung cancer curve began a few years before the influenza epidemic." Moise [7] of New Haven points to the similarity between areas found in primary lung carcinoma and epithelial changes as a result of influenza.

PATHOLOGY

Ewing [8] states that pulmonary carcinoma may be classified according to histogenesis as arising from (*a*) bronchial epithelium; (*b*) bronchial mucous glands, and (*c*) alveolar epithelium. While pathologists give these three distinct types of primary lung tumor, their general opinion is that carcinoma arising from the bronchial epithelium is the most common type but that the original type of cells cannot always be distinguished.

Metastases from pulmonary carcinoma are usually numerous and widespread but vary with the grade of malignancy. The vascularity of the organ facilitates dissemination, while the abundant lymphatic channels lead to infection of the bronchial nodes in a high proportion of cases and to early extension throughout the lungs and pleura.

GENERAL CLINICAL CONSIDERATIONS

There are certain interesting facts concerning primary lung cancer. It affects males about five times as often as females.[9] The greatest incidence is in the sixth decade. The six cases reported here occurred between the ages of 49 and 68, though the disease has been reported in a child of 13.[10] The duration of the disease varies from two weeks to five years.[5] In most instances it is less than one year. Among my six cases the shortest duration was four months and the longest three years.

One of the cases occurred with a large lung abscess. It was impossible to tell which was primary. There was no evidence of metastatic areas in the lung from the roentgenologic standpoint. The patient died three days following operation for evacuation of the abscess. Lung abscess has been commonly found in conjunction with cancer of the lung.[11]

TABLE 1.—*The Increase of Carcinoma of the Lung Expressed in Percentage as Reported by Different Authors*

Name	Date	Percentage of Carcinoma of the Lung in All Autopsies	Percentage of Carcinoma of the Lung in All Types of Carcinoma
Hanf, Dora: Virchows Arch. f. path. Anat. **264**: 366, 1927	1903	0.2	3.7
	1910	0.7	7.3
	1917	0.6	7.3
	1921	1.1	6.2
	1925	1.5	7.9
Kikuth, W.: Quoted by Simpson.....	1889-1899	0.07	
	1900-1911	0.39	
	1912-1913	0.7	9.5
Seyfarth: Quoted by Weller.....	1900-1906	...	5.01
	1924	...	15.05
Reinharit: Quoted by Simpson.....	1878	0.057	
Fuche: Quoted by Simpson.....	1885	0.065	
Oerstrom: Quoted by Simpson.....	1907	0.310	
Briese: Quoted by Simpson.....	1898-1916	0.47	4.51
Barron, Moses: Arch. Surg. **4**: 624 (May) 1922	1912-1918	0.2	
	1919-1921	0.9	
Klotz, O.: Canad. M. A. J. **17**: 989 (Sept.) 1927	1910-1927	0.82	
Staehelin, R.: Klin. Wchnschr. **4**: 1833 (Sept. 24) 1925	1900-1911	0.20	2.1
	1912-1914	0.50	5.0
	1915-1923	0.63	5.0
	1924	0.67	4.9
Simpson, S. L.: Quart. J. Med. **87**: 413 (April) 1929	1907	0.51	1.0
	1912	0.88	1.0
	1917	0.52	1.1
	1922	1.70	3.1
	1925	2.05	3.7
Beberfeld, H.: Med. Klin. **22**: 1371, 1926	1897-1925	...	0.056
	1897-1906	...	4.8
	1907-1916	...	6.0
	1917-1925	...	6.2
Brandt, M.: Deutsche med. Wchnschr. **53**: 1824, 1927	1900	0.2	1.5
	1911	0.5	2.1
	1915	1.1	8.1
	1921	2.0	11.0
	1925	1.6	10.6
Steiner Clinic	1924-1929	...	3.3

The signs and symptoms are not new or different from those found in other pulmonary conditions. The cardinal symptoms of early primary lung tumor are pain, dyspnea, cough, sputum and fever. Pain is an early and persistent symptom of a pleuropulmonary tumor. The pain is often referred to the shoulder, arm or epigastrium. In one of my cases the pain around the costal margin and the right flank was the only symptom. In another, pain radiating down the arm and shoulder was the most distressing symptom. In a third case, pain in the back and the right arm was the first symptom. A fourth patient had pain in the dorsal spine and the left side of the chest, left shoulder and arm. Persistent pain in a person in the cancer age should always call to mind the possibility of a hidden malignant condition. The occurrence of severe and continuous pain in the

2. Berblinger, W.: Die Zunahme des primären Lungenkrebses in den Jahren 1920-1924, Klin. Wchnschr. **4**: 913 (May 7) 1925.
3. Konrad, A., and Franke, W.: Ueber primäre Lungenkarzinome, Deutsche klin. Wchnschr. **55**: 652 (April 19) 1929.
4. Klotz, O.: Cancer of the Lung, with a Report upon Twenty-Four Cases, Canad. M. A. J. **17**: 989 (Sept.) 1927.
5. Adler, I.: Primary Malignant Growths of the Lung and Bronchi, New York, Longmans Green & Co., 1912.
6. Staehelin, R.: Ueber die Zunahme des primären Lungenkrebses, Klin. Wchnschr. **4**: 1853 (Sept. 24) 1925.
7. Moise, T. S.: Primary Carcinoma of the Lung, Arch. Int. Med. **28**: 733 (Dec.) 1921.
8. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1928.
9. Weller (footnote 1); Adler (footnote 5).
10. Simpson, S. L.: Primary Cancer of the Lung, Quart. J. Med. **87**: 413 (April) 1929.
11. Fishberg, Maurice; and Rubin, E. H.: Carcinomatous Abscess of the Lung, Am. J. M. Sc. **178**: 20 (July) 1929.

absence of pleurisy is almost characteristic of neoplasm. Constant boring pain in the upper abdomen, arm or shoulder with indefinite or unusual pulmonary symptoms should awaken the suspicion of a pulmonary tumor. Such pain is not usually associated with tuberculosis. With the onset of an effusion the pain does not disappear, nor does it disappear after the chest is tapped. Dyspnea, sometimes paroxysmal, is a common symptom of primary lung tumor. Occasionally it occurs in well nourished patients. It may be caused by pressure on the trachea or a large bronchus, or may be associated with pleural effusion. In the absence of vascular disease, dyspnea in the cancer age must at least suggest lung cancer. Cough, dry or productive, may be the first symptom, as in one of my cases, or it may be absent altogether. When it appears it is usually persistent throughout the illness and may become harassing before definite pulmonary signs are discovered. The sputum is not characteristic. It may be bloody or purulent and may contain tubercle bacilli. It may be large in amount or so scant as to be hardly noticeable in the early stages. Fever, usually low, is commonly present. It may be irregular or continuous. The curve does not vary much from that of active tuberculosis.

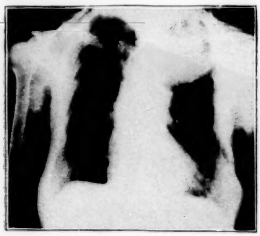

Fig. 1 (case 1).—Spindle cell sarcoma of the lung as seen at necropsy.

According to the clinical classification, there may be (1) a small solitary tumor producing slight or mild symptoms; (2) a tumor with extensive pulmonary involvement producing severe symptoms; (3) a tumor with extensive pulmonary involvement and causing symptoms from invasion or pressure on the mediastinum, or (4) a lung tumor with such extensive metastases that they cause the predominating symptoms.

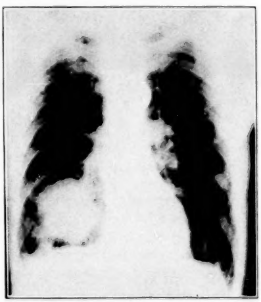

Fig. 2 (case 2).—Primary carcinoma of the lung as seen at necropsy.

It is the first class, the small solitary tumor producing mild symptoms, that we as clinicians should keep in mind and diagnose. One, and generally two, of the following symptoms are present: pain, dyspnea, cough, sputum or fever. These symptoms should suggest the possibility of a lung tumor and the need for careful physical and roentgen examination. Physical examination may be entirely negative, or there may be a slight area of dulness and possibly distant breath sounds. In some cases of extensive involvement, physical signs are few and elusive; this suggests the necessity for the roentgen ray, either in the presence or in the absence of physical signs. Intratracheal injection of iodized oil may at this point show an occlusion of a bronchus. When the tumor has caused extensive pulmonary involvement, there may be an area of dulness and bronchial breathing. If a bronchus is partially obstructed, "cornage," that is, the rasping, prolonged expiration like that heard normally over the trachea, may be heard. The occlusion of the bronchus frequently causes bronchiectasis and produces deceptive physical signs. Often pleural effusion causes flatness and diminished breathing on the side of the tumor. This fluid may be withdrawn for relief of pain, usually without success, and often the fluid recurs quickly. It may be straw-colored, hemorrhagic or purulent, as it was in one of my cases. Pleural effusion occurred in thirty-nine cases of Simpson's[10] group of 139. It was purulent in nine cases, sanguineous in ten and clear in twenty; there was a dry fibrinous pleurisy in fifty-one cases. Again, if from the primary lesion extension occurs to the neighboring tracheal and bronchial nodes, signs of mediastinal pressure occur. Shortness of breath increases, the veins of the neck become distended, and later edema of the face is produced. The cough becomes brassy in type, and much purulent and probably bloody sputum occurs. Dyspnea and dysphagia commonly are very severe. There may be pressure on the nerves, the phrenic, intercostal, vagus, recurrent laryngeal, sympathetic and others. Hoarseness, paralysis of the vocal cords, cachexia and cyanosis may occur.

TABLE 2.—*Location of Metastases of Cancer of Lung as Given by Various Authors*

	Adler[5] in 374 Cases	Klotz[4] in 21 Cases	Simpson[10] in 139 Cases	Kikuth[10] in 246 Cases
Bronchial glands	117	18	104*	..
Liver	103	10	45	70
Bones	57	9	82	48
Kidney	58	6	14	25
Brain	53	3	19	41
Pleura	52	3	31	..
Mediastinal glands	45	9	..	..
Pericardium	39	3	..	..
Suprarenal	38	9	41	21
Tracheal glands	26	..	..	..
Cervical glands	23	..	70†	..
Intraperitoneal glands	23	8	..	..
Pancreas	..	..	25	11
Thyroid	..	..	4	5

* Regional glands.
† Extrathoracic glands.

If metastasis occurs, all signs may point to the organ secondarily invaded. Moise[7] reported four cases of primary lung tumor in which, because of symptoms from metastatic areas, operation was done for brain tumor. In any case of brain tumor, of apparent gallbladder disease, of tumor or of tuberculosis of the vertebrae, roentgenograms of the chest should be made. These can be done with very little trouble and often save the surgeon, the physician and especially the patient from an embarrassing situation.

In earlier years, most of the cases were reported by the pathologist. Now in an increasing number diagnosis is made early. First there is in the mind of the clinician the possibility of a primary lung tumor and the possibility that primary lung tumors are not so rare as they were once thought to be. A careful history and physical examination should exclude other disease, particularly cancer in other parts of the body, which might cause metastatic cancer of the lungs. Then the chief laboratory assistance in the early diagnosis is the roentgenogram. It is by this means that the so-called silent lung cancers are found. Conditions slight and obscure

to physical examination may become large and plain when visualized with the fluoroscope. Pneumothorax for diagnostic purposes is valuable. Biopsy of tissue removed bronchoscopically or, in rare instances, coughed up may establish the diagnosis. Bronchoscopy may be

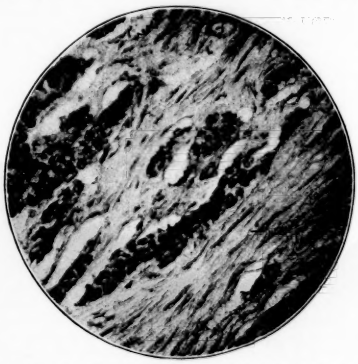

Fig. 3 (case 2).—Section of carcinoma showing cell masses at strands in dense connective tissue.

considered a serious procedure and the patient may not submit to the intratracheal iodized oil injection or pneumothorax, but nothing is more pleasing to a patient than to be "x-rayed." There is often anemia and a leukocyte count of 16,000, but blood studies are not characteristic. The presence of tubercle bacilli in the sputum does not exclude the possibility of lung tumor, for they are occasionally found together.

Surgery offers the only hope of cure. Roentgen irradiation has been tried and has given disappointing results. A group of nineteen patients treated by high voltage roentgen rays is reported from the Mayo Clinic.[12] All died within ten months, all but three in four months. This brief period of survival is the same in a group of cases in which there was no treatment. In spite of the fact that life was not prolonged, roentgen treatment in all but advanced cases gave marked temporary palliation. In the six cases reported here, not even temporary palliation was noticed following roentgen treatment.

REPORT OF CASES

CASE 1.—Mrs. R., aged 67, a Jewess, came to the office because of cough, wheezing, and pain in the left shoulder. Her father and one sister had died of cancer. She had had "bronchial trouble" ever since she could remember. Six months before admission she began to cough violently and she "raised about an ounce of yellow sputum daily." This cough had persisted and was attended by wheezing and slight asthma. The pain in her left shoulder, which began about the same time, had been constant and was worse after coughing. Shortness of breath had been present on exertion. She had had neither fever nor night sweats, though she had lost 10 pounds (4.5 Kg.). The patient was small and emaciated, and had a persistent productive cough. Respiration was rapid, shallow and wheezing. There was dulness above the second rib on the left and posteriorly there was flatness from the apex to the third spine. Over this area breath sounds were distant and no râles were heard. Over the rest of the chest, showers of moist râles were heard. The laboratory report showed a negative Wassermann reaction, 20,000 leukocytes, 3,650,000 red blood cells, 65 per cent hemoglobin, and a differential count of 75 neutrophils, 11 small lymphocytes, 9 large lymphocytes and 3 eosinophils. No tubercle bacilli were found in the sputum. With the aid of the roentgen ray, a diagnosis of lung tumor was made.

As the patient grew worse, the tumor projected about 2 cm. above the clavicle and edema of the face and left arm appeared. Two series of roentgen treatments gave no beneficial result. The patient died nine months after her first symptoms began.

At necropsy a hard mass about 5 cm. in diameter was seen in the upper lobe of the left lung which was adherent to the chest wall, and, at this point, there was a rounded mass somewhat smaller. The lung about the tumor was edematous and somewhat necrotic and it was pulled away from the chest with difficulty. The mass in the chest wall involved two ribs, destroying them so that they could be cut with a knife. Moderate adhesions were scattered throughout both pleural cavities, but no other nodules were found in either lung and no lymph nodes were involved except the lower left cervical nodes. No other organs were involved. Sections of the tumor showed large spindle cells. All lung structure in the tumor was obscured, except that there was a moderate amount of anthracotic pigment. Slight necrosis with infection was present. The diagnosis was spindle cell sarcoma, probably of smooth muscle origin.

CASE 2.—D., a man, aged 68, came to the office because of pain around the edges of the ribs. There was no history of cancer in his family. The patient had been well up to six months before admission, when he began to feel bad. Continuous, disturbing pain occurred around the right costal margin and in the right lumbar region. He had no digestive trouble other than the pain. He was bent and weak, and had a wrinkled, dry skin. His muscles showed much wasting. The thorax was emphysematous. The right lower half of the chest appeared pushed in. The percussion note over the right lung was hyperresonant except for slight dulness at the base. The liver border was felt 3 cm. below the costal margin. The urine showed a trace of albumin and 1 plus pus. The hemoglobin was 76 per cent; the red blood count, 4,830,000, and leukocytes 12,100.

A roentgenogram showed a spherical mass in the right lower lobe occupying the lung substance of the lobe itself and apparently not touching the heart or the chest wall or the diaphragm. A diagnosis of primary malignant neoplasm of the lung was made. Roentgen therapy was given without beneficial results. The patient died six months after the onset of the symptoms.

At necropsy there was no fluid in either chest cavity. The lower lobe of the right lung was adherent to the chest wall and was almost completely filled by a firm, not very hard, brown mass. One section of the tumor appeared diffuse, cellular, and partly necrotic, without a capsule and grayish-white. No glands were involved. On the chest wall at the site of the tumor there was a white mass 1 cm. in diameter with partial destruction of the rib at that point and infiltration into the muscle. Microscopic section showed the alveolar structure to be almost completely replaced by tumor tissue. The diagnosis was carcinoma of the lung, probably of alveolar origin, with extension into the chest wall and no metastasis.

Fig. 4 (case 3).—Primary carcinoma of the lung as seen at necropsy.

CASE 3.—J. T. M., a man, aged 60, complained of cough, sputum, anorexia and loss of weight for a period of two months. There was no family history of cancer. He had never had pneumonia, bronchitis, asthma or any thoracic diseases, and had been perfectly well until the present illness. He had had three severe head colds three months before the onset of the present symptoms but did not go to bed. Loss of appetite began with a cough, and at this time he began to lose weight. He had no

12. Paterson, R.: Roentgen-Ray Treatment of Primary Cancer of the Lung, Brit. J. Radiol. **1**: 90 (March) 1928.

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pain at any time. Four months after the onset, the cough and loss of weight had progressed greatly and he raised a large quantity of foul sputum. He then came to the hospital, where he was kept continually in bed. The odor of the sputum became worse. The temperature reached 100 F. daily. The measured amount of sputum was from 200 to 500 cc. in twenty-four hours; respiration ranged from 22 to 26, and the pulse rate from 88 to 108; the urine was normal, and the leukocytes on admission to the hospital were 18,000. Two months later they were 32,000; the red blood count was 2,800,000 and the Wassermann reaction was negative. A diagnosis of abscess of the lung was made; drainage was established and 60 cc. of very foul pus was obtained. The patient died three days later. Partial necropsy revealed primary lung carcinoma.

Case 4.—W. W. H., a white man, aged 51, had been well until April, 1928, at which time he developed influenza, which ran a course of ten days, although he was not confined to bed. The disease did not entirely disappear and pain soon developed in the right side, followed by shortness of breath. A month later

Fig. 5 (case 5).—Gross specimen of primary carcinoma of the lung removed at necropsy.

the patient developed an increasingly productive cough. The right side of the chest was flat. This was tapped and 16 ounces (0.5 liter) of clear fluid was removed. Two days later 32 ounces (1 liter) was removed, and two days later 16 ounces was removed. Repeated tapping did not relieve the pain, but the patient was able to breathe more easily. July 1, 1928, a small firm gland was found in the axilla. The symptoms consisted mainly of shortness of breath, some pain and general weakness, but very little loss in weight. Physical examination was negative, except for the chest. The left side was normal. Expiration was markedly decreased on the right and there was flatness below the third spine. Above this resonance was impaired. Breath sounds were absent over the back and below the third rib in front. One enlarged axillary gland 2 cm. by 2 cm. was found. One skin nodule 0.5 cm. by 0.5 cm. was noted in the lower part of the right axilla. In the abdomen a firm tender mass was palpated in the upper right quadrant; this was evidently an enlarged or misplaced liver. The veins were not dilated over the abdomen. Laboratory reports were as follows: erythrocytes, 3,700,000; hemoglobin, 60 per cent; leukocytes, 13,200; neutrophils, 79; small lymphocytes, 5; large lymphocytes, 14; urine normal. Thirteen roentgen treatments to the chest were given without apparent result. The sputum increased and became bloody in character. Weakness became more marked and the patient died nine months after his first symptoms. A diagnosis of a possible malignant condition of the lung was made.

At necropsy the heart was found pushed over to the left side, the base of the heart being at least 2 cm. beyond the midline. The right half of the thoracic cavity contained friable white tissue, and about 2 liters of thick, greenish-yellow pus. The mass of tissue apparently enclosed the right lung, and involved the parietal pleura and diaphragm. Cross section showed a small amount of lung tissue remaining in the center, in which, however, there was no well defined tumor. The left lung was not involved. The layers of the pericardium were adherent so that, in incising it, one cut directly into the cardiac muscle. The bronchial nodes were only slightly enlarged. The liver was of normal size, slightly mottled and moderately fatty, and contained a whitish nodule about 1.5 cm. in diameter. Sections of the tissue about the lung showed chiefly edema and necrotic connective tissue with areas of epithelial cells in strands and masses. The nodule in the liver was metastatic, but its cell type was that of low cuboidal or low columnar epithelium, although there were areas in which the cells were more or less flattened. The kidney showed a metastatic structure similar to that of the liver. The diagnosis was primary carcinoma of the lung. The pavement character of the cells of the lungs indicated a tumor arising from the bronchioles or the alveoli. The columnar type of cell seen in the metastatic nodule would indicate that this arose in the epithelium or bronchioles.

Case 5.—H. H., a man, aged 50, complained of pain throughout the right arm and swelling and stiffness of his neck of one month's duration. A physician told him that he had a tumor in his chest and sent him to the Steiner Clinic. He had lost 20 pounds (9 Kg.). He was in a dull mental state when admitted to the hospital, so that no history of pulmonary symptoms was obtained. He was slightly emaciated. There was bilateral exophthalmos with some lagging of the lids. The fundi were normal. One large tender gland was palpated in the right cervical region. There was some crepitation in the right shoulder joint. The chest showed flatness above the third rib on the left. Breath sounds were distant over this area. The laboratory report showed: hemoglobin, 70 per cent; red blood cells, 4,000,000 and leukocytes, 20,950 with neutrophils 80, small lymphocytes 12, large lymphocytes 8, and basophils 1. The Wassermann reaction was negative. One tubercle bacillus was seen. The urine was normal. A cervical gland had been removed previously and a diagnosis of melanosarcoma was made. The patient died four months after the onset of symptoms.

At necropsy no moles or pigmented areas of the skin were noted. There was a small amount of fluid in both pleural cavities. The right lung was soft and aerated. The left lung showed a complete consolidation of the left upper lobe with a thick contracted scar on the surface. There was involvement of the mediastinal, bronchial and cervical nodes. One nodule was present in the liver. The diagnosis was an epidermoid carcinoma, with its origin probably in the terminal bronchioles.

Case 6.—M. K., a man, aged 59, Jewish, had been in good health until two and one-half years before coming to our clinic. Since then he had had severe persistent cough, which came on in paroxysms. He had had very little sputum, which was never bloody. In fifteen months he had not lost any weight. The family history was negative. A roentgenogram revealed a shadow in the base of the right lung. A large needle was inserted into the right side of the chest, but no fluid was obtained. The patient was sent to his son in New York. At the Lenox Hill Hospital a specimen was taken through a bronchoscope and a diagnosis of cancer of the bronchus was made. He received twenty roentgen treatments. At this time he was losing weight and strength, but he was not coughing. Seven months later a roentgenogram showed a definite increase in the size of the shadow in the right base, but no evidence of metastasis. A roentgenogram of the pelvis and right knee showed no evidence of bone involvement. Twelve additional treatments were given. The patient died three years after the onset of his illness.

SUMMARY

Primary cancer of the lung is now responsible for from 5 to 10 per cent of deaths from cancer. At the Steiner Clinic, in 150 cancer necropsies, five cases were diagnosed cancer of the lung. Carcinoma of the lung is more common than sarcoma. Cancer is more frequent in men than in women, and its highest incidence is in the sixth decade. It may be associated with lung abscess or tuberculosis.

The cardinal symptoms are pain, dyspnea, cough, sputum and fever. According to my clinical classification there may be:

1. Slight or mild symptoms from a small solitary nodule.

2. Severe symptoms from extensive pulmonary involvement.

3. Symptoms due to invasion of, or pressure on, the mediastinum from extensive pulmonary involvement.

4. Symptoms from extensive metastatic areas from an asymptomatic tumor.

A careful history, physical examination and roentgenogram will usually establish the diagnosis.

Early surgical resection offers the only hope of cure. Roentgen therapy has afforded temporary palliation in some instances.

Of the six cases of primary lung tumor, confirmed by microscopic diagnosis, here reported, three were seen in the office and three at the Steiner Clinic. All were treated at the Steiner Clinic.

768 Juniper Street, N. E.

SUNLIGHT TYPE S-1 LAMP (G. E.) THERAPY IN HUMAN RICKETS AND RACHITIC SPASMOPHILIA *

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AND
G. RICHARD RUSSELL, M.D.
CLEVELAND

On another occasion [1] it was reported from this hospital that single, weekly, erythema-producing exposures to the mercury vapor quartz lamp were adequate for the cure of rickets and rachitic spasmophilia. The appearance on the market of another source of ultraviolet rays for use by physicians and the public, namely, the Sunlight Type S-1 Lamp [2] of the General Electric Company made it seem advisable to establish the efficacy of this source of the antirachitic factor. It was therefore decided to make observations in a manner similar to that followed previously with the quartz lamp.

Accordingly, three rachitic patients were exposed once a week, front and back, to Sunlight Type S-1 Lamp Number 1497-279,[3] in such a manner as to produce a definite erythema. Two of the infants were colored, and one was Italian.

The accompanying tabulation gives complete information regarding the observations made by us on the three patients, both during the period before treatment was started and during the period after treatment was begun. It is evident that in each patient a decided improvement in the blood calcium and inorganic phosphate level was recognizable after two weeks, and that normal figures were reached in the first patient in four weeks, in the second patient in five weeks, and in the third patient in seven weeks.

Fig. 1.—Appearance of bones in the arm just before treatment was begun, Sept. 24, 1929. The blood calcium was 7.3 and the blood phosphorus 2.9.

Fig. 2.—Appearance of bones four weeks after treatment had been begun, Oct. 29, 1929. Definite healing is apparent. The blood calcium the third week was 9.9 and the blood phosphorus 4.1; the fifth week the blood calcium was 10.5 and the blood phosphorus 5.6.

Fig. 3.—Appearance of bones seven weeks after treatment had been begun, Nov. 20, 1929. Complete healing had taken place. The blood calcium was 11 and the blood phosphorus 7.2.

Fig. 4.—Eleven weeks after treatment, Dec. 17, 1929, showing essentially normal bone. The blood calcium was 11.8 and the blood phosphorus 6.

From a study of the roentgenograms it was learned that complete healing occurred in the second patient by the fifth week and in the third patient by the seventh week (figs. 1 to 4), and that it had reached the 50 per cent stage in the first patient during the fourth week, at which time the patient left the hospital.

* From the Babies and Childrens Hospital and the Department of Pediatrics, Western Reserve University School of Medicine.

1. Gerstenberger, H. J., and Hartman, J. L.: Quartz Lamp Therapy in Human Rickets and Rachitic Spasmophilia, J. A. M. A. **92**: 367 (Feb. 2) 1929.

2. This lamp is a combination incandescent tungsten-mercury arc housed in a glass bulb which is permeable to ultraviolet rays of a wavelength of 2,800 angstrom units.

3. This lamp was one of the first produced and was not as potent as some of the later models; therefore the time was increased above that and the distance decreased below that required by later models in order to produce a definite erythema. The dosage for these first observations was established not by the Rost-Keller test but by the appearance of a definite erythema on the skin of the patients studied. With one of the later models a minimal perceptible erythema was produced at a distance of 80 cm. (30 inches) within five minutes, a definite erythema within twelve minutes, and a vivid erythema within twenty-two minutes. The erythema dose for this lamp determined by the Rost-Keller method was eleven minutes at 80 cm.

Figure 5 [4] shows comparative spectrograms of the quartz mercury arc, the Sunlight Type S-1 Lamp and midsummer sunlight. It also reproduces the erythemal curve of Hausser and Vahle, the transmission curve of the S-1 Lamp, and the relative visibility of radiant energy.

CONCLUSION

Observations made on three rachitic infants showed that weekly erythema-producing exposures of both the front and the back body surfaces to the rays produced by the Sunlight Type S-1 G. E. Lamp brought about healing in the roentgenograms and in the blood within the same time established by the authors previously for similar weekly exposures of rachitic infants to the quartz lamp.

This lamp is a combination incandescent tungsten-mercury arc housed in a glass bulb which is permeable to ultraviolet rays of a wavelength of 2,800 angstrom units.

2103 Adelbert Road.

4. This chart is printed through the courtesy of Mr. M. Luckiesh, director of the Lighting Research Laboratory, Nela Park, Cleveland.

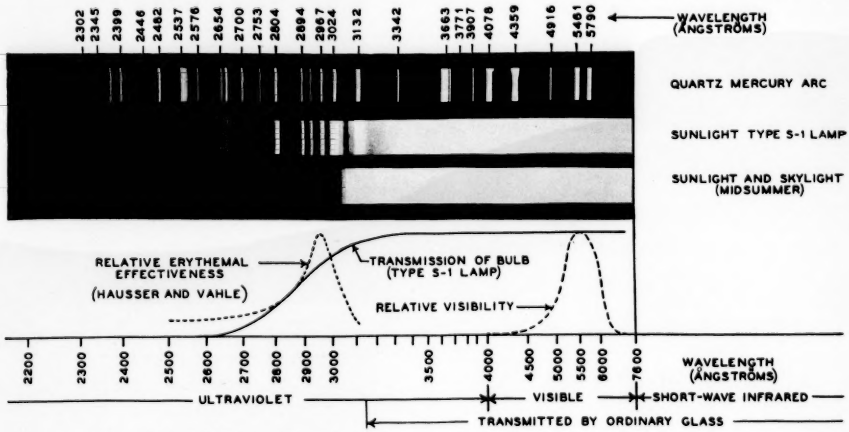
2302 2345 2399 2446 2482 2537 2576 2654 2700 2753 2804 2894 2967 3024 3132 3342 3663 3771 3907 4078 4359 4916 5461 5790
WAVELENGTH (ANGSTROMS)
QUARTZ MERCURY ARC
SUNLIGHT TYPE S-1 LAMP
SUNLIGHT AND SKYLIGHT (MIDSUMMER)
RELATIVE ERYTHEMAL EFFECTIVENESS (HAUSSER AND VAHLE)
TRANSMISSION OF BULB (TYPE S-1 LAMP)
RELATIVE VISIBILITY
2200 2300 2400 2500 2600 2700 2800 2900 3000 3500 4000 4500 5000 5500 6000 7000
WAVELENGTH (ANGSTROMS)
ULTRAVIOLET
VISIBLE
SHORT-WAVE INFRARED
TRANSMITTED BY ORDINARY GLASS

Fig. 5.—Comparative spectrograms of the quartz mercury arc, the Sunlight Type S-1 Lamp and midsummer sunlight.

Rickets and Rachitic Spasmophilia Treated with Sunlight Type S-1 Lamp (G. E.)

				Period Before Treatment						Progressive Healing at Beginning of Treatment	Period After Treatment Was Begun					
								Duration of Roentgen Healing, Week	Cathodal Opening Contraction		Cathodal Opening Contraction Greater Than 5, Week	X-Ray		Blood		
					Blood							Beginning Healing, Week	Complete Healing, Week			
Name	Color	Age, Mo.	Rickets	Duration, Week	Week	Calcium	Phosphorus							Week	Calcium	Phosphorus
1. F. L. B.	Negro	3	Moderate	3	1	8.3	3.7	1	3	No	2	2	50%, 4th	2	10.7	6.3
					3	7.8	4.2							4	11.9	6.5
2. R. W.	Negro	15	Moderate	3½	1	8.8	3.4	1	7	No	1	2	5th	1	9.2	5.4
					3½	6.4	3.9	...	4					3	10.2	5.8
														5	10.5	5.6
														7	10.5	6.3
														9	11.0	6.0
														11	12.0	6.1
														13	11.8	6.8
														15	10.6	5.6
3. D. T.	White	4	Marked	6	1	8.8	2.7	0	5	No	1-2	2	7th	1	8.7	2.8
					6	7.3	2.9	...	4					3	9.9	4.1
														5	10.5	5.6
														7	11.0	7.2
														9	11.4	6.8
														11	11.8	6.0

HIGH INTESTINAL FISTULA

REPORT OF CASE TREATED BY MODIFICATION OF POTTER METHOD

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AND
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Caryl Potter [1] in 1927 and in 1929 described a medical treatment of duodenal and high intestinal fistula, and reported its successful use in eight cases. Since that time we have treated successfully a case of high jejunal fistula, using a modification of Potter's idea.

In describing his treatment Potter said:

> The problem resolved itself into destroying the potency of the intestinal juice by neutralizing its alkalinity as far as possible, and taking care of the excess by supplying a protein and fat combination in sufficient quantities to use up the juice

1. Potter, Caryl: Treatment of Duodenal Fistula, J. A. M. A. **88**: 889-901 (March 19) 1927; Treatment of Duodenal and Fecal Fistula, Further Observations, ibid. **92**: 359-363 (Feb. 2) 1929.

before it could attack the tissues of the abdominal wall. Tenth-normal hydrochloric acid, the percentage found in the gastric juice, was used to overcome the alkalinity of the fistulous tract, and a thick, heavy, especially prepared beef extract mixed with olive oil was used as the food for digestion by the pancreatic juice and bile. The wound was dressed every two hours, the surrounding skin and crater of abdominal wall which had previously been eaten out by the secretion were thoroughly cleansed with alcohol and dried, and then tenth-normal hydrochloric acid was applied, the surfaces being left drenched with the acid. After this a thin piece of gauze soaked with the acid was tamped loosely into the bottom of the crater, the edges of the gauze being sufficiently large to extend out onto the surrounding skin, and the crater was then packed full of gauze dripping with oil and a heavy beef preparation.

This treatment is based on sound physiology and has proved remarkably effective in Potter's series of cases. In attempting to apply it in our case of high jejunal fistula, we encountered difficulty. The preparation of the beef juice was a long, arduous procedure, and a delay of twenty-four hours seemed inevitable before we could get our first supply. The crater was enlarging rapidly, doubling its size in twenty-four hours; and the patient was in such poor physical condition that it appeared that death would ensue quickly unless erosion of the abdominal wall was halted and nourishment provided. We sought a substitute for the beef juice in some readily available protein substance, and endeavored to contrive a dressing which would not require changing every two hours, so that the patient could get some rest. Both of these ends were attained. Four solutions were found available, namely: (1) egg albumin; (2) protein milk powder; (3) glue (French), and (4) Witte's peptone. The peptone was chosen for trial and a 10 per cent solution prepared.

The dressing was devised as follows: A 6 inch square of gauze containing about eight thicknesses was prepared with a hole cut in its center the same size as the crater in the abdominal wall. Around the border of this hole was sewed a skirt of gauze about 2 inches wide so that, when it was spread out flat over the wound, the skin for a radius of from 2 to 3 inches from the margin was completely covered and the central skirt lined the walls of the crater. Down through the central opening ran a number 18 French catheter, its lower end entering the fistulous opening in the jejunum for about 2 cm. This catheter conveyed the tenth-normal hydrochloric acid. The circumference of the central opening, where the gauze skirt was sewed to the flat gauze, was encircled by a number 14 French catheter whose sides had been perforated with fine holes 1 cm. apart for a distance of 12 cm. This catheter conveyed the 10 per cent peptone solution which saturated the gauze and kept the skin, skin edges and sides of the crater bathed in the fluid (fig. 1). Gauze soaked in tenth-normal hydrochloric acid was packed around the central catheter leading into the fistula so that food could not escape through the fistula.

The respective catheters were connected to a source of supply so that a constant drip of the protective solutions at the rate of 5 cc. a half hour was directed to the proper point; these solutions consisted of peptone solution to cover the skin and crater wall and supply a protein to be digested by any unneutralized trypsin, and the tenth-normal hydrochloric acid to enter the jejunum and inactivate the digestive ferments before they emerged from the fistula.

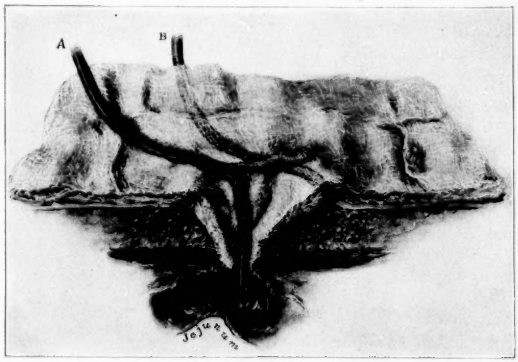

Fig. 1.—Appearance of dressing and wound in cross-section, showing the fistula and method of treatment: *A*, tube carrying the tenth-normal hydrochloric acid; *B*, tube carrying the peptone solution.

REPORT OF CASE

Mrs. F. J., a white woman, aged 55, during the past year had had four attacks of right upper quadrant pain diagnosed as acute cholecystitis. Her last attack began on April 25, 1929, with severe pain, fever, nausea and constipation. On physical examination she appeared acutely ill and in great pain. The temperature was 102.4 F., the pulse 110, and respirations 24. The skin and sclerae showed a faint icterus. The abdomen was slightly distended, and there was extreme tenderness and moderate rigidity over the right upper quadrant. A definite mass the size of a lemon was palpable in this region. A preoperative diagnosis of acute suppurative cholecystitis was made.

At operation a small, partially gangrenous, suppurating gallbladder was found, wrapped almost completely with suppurating omentum. On attempting to dissect the omentum away, the operator opened into an abscess cavity leading down to the dome of the gallbladder which was almost completely destroyed. An ounce of thick, green pus and about a hundred white stones of various sizes were evacuated. After removal of the pus and stones, a rubber tube drain was sewed into the gallbladder with a purse-string suture. Two cigaret drains, one to the foramen of Winslow and one to the right lumbar gutter, were inserted and the wound was closed in layers. Temperature, pulse and respiration became normal on the fourth day, when drainage ceased. The temperature remained normal for four days and then rose gradually to 104. Exploration of the gallbladder sinus revealed a stone in the cystic duct, apparently the cause of cessation of the biliary drainage. The rubber tube drain was reinserted in the gallbladder tract and drainage reestablished.

For three weeks the temperature did not rise higher than 99; then it began to climb slightly higher each evening. The patient complained of pain to the right of the old gallbladder sinus. Careful search finally revealed a drop of pus oozing from the side wall of the sinus. A probe passed into this secondary sinus released a small amount of foul pus. The probe led medially toward the umbilicus. Two days later drainage of pus ceased and the temperature rose again. An encapsulated abscess was suspected. A 2 inch incision under local anesthesia was made vertically downward toward the umbilicus from the middle of the old incision. This opened into a cavity just posterior to the anterior abdominal wall which contained a large amount of foul pus and necrotic material resembling omentum. As the contents of this cavity were being evacuated,

particles of food such as peas, spinach and milk curds were recognized among the pus, all of which was stained with golden yellow bile. A huge fistula admitting a finger was discovered leading into the jejunum apparently close to the duodenum. A profuse flow of alkaline, semifluid intestinal contents mixed with pus rapidly attacked the enlarged wound and surrounding skin. In twenty-four hours so much digestion of abdominal wall had occurred that the crater was double its former size and the fistulous opening into the jejunum at the bottom of the crater had increased proportionately (fig. 2). The patient began to look haggard; she was failing alarmingly.

At this point it was determined to try Potter's method, using beef juice and hydrochloric acid dressings. As already noted, beef juice was not immediately available because of the difficulty of preparing it; 10 per cent solution of Witte's peptone was therefore substituted. Later, to eliminate the frequent changes of dressing and consequent loss to the patient of much needed rest, the continuous wet dressing of peptone and hydrochloric acid already described and illustrated was instituted.

The effect of the treatment was remarkable. In twenty-four hours the wound looked less irritated and had not grown larger, and the sides of the crater began to look clean. On the second day, all slough was gone, the foul odor of pus was absent, and healthy granulations were apparent. On the third day intestinal drainage was markedly diminished, and the fistula, filling up with granulations, barely admitted a number 14 French catheter. The distention of the abdomen previously existing was brought under control and this reduction in intra-intestinal pressure was a factor in lessening the evacuation of intestinal contents through the fistula. A few days later the fistulous

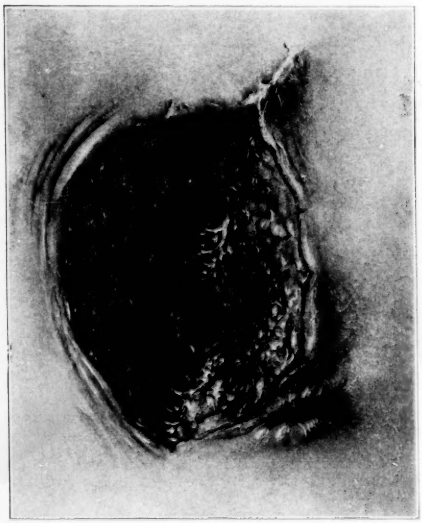

Fig. 2.—Appearance of crater and fistula from above just prior to institution of peptone-hydrochloric acid treatment. The fistulous opening was about one and one-half fingerbreadths wide. The umbilicus is just below and to the right of the wound.

opening was too small to admit a fine cotton applicator. No solid or semisolid material came through. On the twelfth day the fistula was closed. All drainage had ceased. The peptone and hydrochloric acid dressings were discontinued. The wound was clean and healthy (fig. 3). On the fourteenth day the edges of the wound were secondarily closed with silkworm-gut. Two days later the patient was discharged from the hospital, with the wound completely healed.

CONCLUSIONS

1. The principles of the Potter method of treatment of duodenal and intestinal fistulas are physiologically sound and clinically effective.

2. Witte's peptone is a convenient, readily prepared and effective protein substitute for the beef juice-olive oil mixture recommended by Potter.

Fig. 3.—Appearance of wound one week after institution of peptone-hydrochloric treatment. The fistulous opening is almost completely closed.

3. The combination of Witte's peptone in 10 per cent solution of sterile distilled water and tenth-normal hydrochloric acid as described resulted in the cure of a severe case of high jejunal fistula.

4. The special type of irrigation dressing here described permits continuous treatment without disturbing the patient.

5. Hydrochloric acid has a marked antiseptic and healing effect on the foul infected tissues of a fistulous tract. The rapidity with which the wound was cleaned of pus and necrotic tissue by this method suggests its use in other suitable purulent wounds.

373 State Street.

The Heralds of Individuality.—There is no question that the form of the bony skeleton, especially the proportions of facial design, tell much about the man's race and family breed. But it is in the nonmeasurable, moving parts of the face and limbs and trunk that the story of his inner emotional life is written. Facial expression, posture, gesture are the heralds of individuality in function. The habit of looking at these and learning to read their significance is as necessary a part of the good doctor's equipment as is his ability to recognize the difference between the lymphocyte and a polynuclear leukocyte. In itself, the study of human morphology adds perhaps but little; as a means to the larger conception of the man as a whole, however, it is well nigh indispensable.—Draper, George: Disease and the Man, New York, Macmillan Company, 1930, p. 105.

A CRITICAL SURVEY OF CHARCOT'S ARTHROPATHY

ANALYSIS OF EIGHTY-EIGHT CASES *

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Since Charcot's original description [1] of the arthropathy which bears his name, an enormous number of articles have been written. There are many hundreds of individual case reports and a number of case analyses of smaller groups of cases relating to some particular phase of the subject. No comprehensive study of any large group, however, has been attempted. A considerable degree of confusion and contradiction concerning the question occurs not only in the literature but even in standard textbooks.

The characteristic enlarged, hypermotile, relatively painless joints are classified under various headings, as Charcot's or tabetic arthropathy, neuropathic arthritis, syringomyelic arthropathy, and arthropathy of peripheral nerve lesions, depending on the author's point of view with regard to the etiologic factors involved.

The differences of sex incidence, the variability in location, the multiplicity of joints involved, and the relation to trauma have been made the subject of some study. With a large material at our disposal—about eighty-eight cases—it appeared that these questions might properly be analyzed with an attempt at their solution.

In our study, therefore, we have tabulated our observations so as to show a definite relation to the following eleven factors: the age of onset, the sex, the joint involved, the history of preexisting syphilis, the duration of syphilis previous to the onset of the joint involvement, the means of establishing the diagnosis, the incidence of trauma, the associated spinal fluid reactions, the type of cerebrospinal disease present, the roentgen observations and, finally, additional associated data.

Of seventy-two cases in which the age of the onset was known, sixty-two occurred between the ages of 35 and 55, eight after 55, and two under 35. The vast majority of our cases show an onset between the ages of 35 and 55, a finding which parallels the age period of the incidence of syphilis of the central nervous system.

The two cases occurring before the thirty-fifth year were shown to have been occasioned by other lesions than syphilis.

Charcot believed that the manner of onset was always sudden. This view, however, is not substantiated by other authors. Of our entire group only nine cases showed a rapid onset, while in fifty-six the manner of onset was gradual. We are convinced that the mode of onset in the vast majority of cases is a gradual one, the lesions frequently being present long before they are evident to the patient, and from the onset until the joint reaches its final stage many months and, in some cases, years may elapse.

With regard to the sex influence, Ochsner [2] in 1917 concluded from his study that a definite susceptibility occurred in females. Orthopedists, on the other hand, for the most part believe that the condition is uncommon or rare in the female sex. In this connection our figures are interesting, showing fifty-five cases, or 62 per cent incidence, in males, and thirty-three, or 38 per cent, in females. In other words, more than one third of our cases occurred in women.

When one compares these figures with the percentage of tabes occurring in females, the figure seems large, it having been stated that tabes occurs in men almost ten times as frequently as in women. With the definite association of tabes and Charcot's arthropathy, it would appear, therefore, that a much larger percentage of cases occur in women than might be expected in view of the incidence of tabes in women.

In considering the question of the joint involved, we were interested not only in the location most frequently attacked but also in the question of whether monarticular or polyarticular involvement occurred. With regard to the involved joints, we found fifty-eight cases, or 66 per cent, occuring in the knee, twenty-two, or 25 per cent, in the ankle, six in the spine, five in the hip, four in the shoulder, and five in other joints. In the last named small group, involvement was found in the carpal-metacarpal, wrist, elbow, shoulder, interphalangeal and tarsometatarsal joints.

Where such small joints were involved, the involvement was for the most part polyarticular. Polyarticular involvement occurred in twenty-five of our cases, or 28 per cent. Bilateral joint involvement occurred in seventeen, and of these, in twelve the knee joints on both sides were involved.

The suggestion was made by Osler [3] that the involvement of the lower extremities was seen most frequently because of the fact that the most marked pathologic change in tabes occurs in the lumbar enlargement of the cord. It seems to us more important as a factor that the joints concerned most frequently were those which undergo the most frequent strain of daily life.

Polyarticular involvement is very common. The x-rays showed in many cases the existence of more joints involved than were clinically visible.

When bilateral or symmetrical involvement occurred, the study of the cases showed that the involved joints developed at different times and not simultaneously.

The x-rays, as a means of diagnosis, are an invaluable aid. The roentgenologic picture is so characteristic that it may be said to constitute the most important diagnostic feature of the condition. Particularly is this the case in the earlier stages of the condition, when the arthropathy may simulate closely other conditions.

In fifty-three cases of our series, the roentgenologic diagnosis, substantiated by the later clinical course of the disease, was made in forty. In the remaining thirteen cases the roentgenologic diagnosis was classified as traumatic or infectious arthritis, a subsequent clinical history showing that the cases developed as instances of Charcot's joint.

With the high incidence of this form of joint disease occurring in the course of cerebrospinal syphilis, the exact relation to the preexisting syphilitic infection is, of course, an all-important factor. In our group we noted that, of sixty-two patients in whom a history of syphilis was recorded, forty, or 59 per cent, gave a positive history, twelve denied syphilis but gave a history of suspicious symptoms, while in sixteen absolutely

* Studies and contributions of the Department of Dermatology and Syphilology, University of Michigan Medical School, service of Dr. Udo J. Wile.

1. Charcot: Leçons sur les maladies du système nerveux, New Sydenham Series, 1868, fourth lesson; Ann. Surg. **25**: 489, 1897.
2. Ochsner, A. J.: Practical Medicine Series, 1917.
3. Osler, William: Principles and Practice of Medicine, ed. 10, New York, D. Appleton & Co., 1926.

negative syphilitic histories were recorded. Of this last group, however, nine had positive Wassermann reactions, the remaining seven being negative. It is therefore evident that, although the majority of patients suffering from this form of joint disease have an antecedent syphilitic history, there is nevertheless a small group of cases in which the condition occurs without this background.

In fifty cases, or 56 per cent of our series, a positive Wassermann reaction and definite pathologic changes in the central nervous system were noted. In eighteen cases a diagnosis of cerebrospinal syphilis was made in the presence of clinical symptoms but in the absence of both blood and spinal fluid reactions. Seven cases presented positive biologic reactions but no cerebrospinal symptoms. There remained two cases with entirely negative serologic reactions and without any cerebrospinal signs or symptoms. One of these occurred in a child, aged 7, in whom a perfectly characteristic Charcot's joint existed in association with spina bifida or as a result of injury to the cord incident to operation for the anomaly. A second case entirely negative for syphilis throughout but with characteristic clinical and roentgen signs occurred following acute arthritis.

These figures would tend to show that, although cerebrospinal syphilis is present in a large majority of the cases, it is not a necessary primary cause, as the condition may occur absolutely independent of spinal cord injury due to syphilitic disease.

The type of cerebrospinal syphilis present was the next factor to be analyzed in our group. Clinically typical tabes occurred in sixty cases, clinically typical paresis in two cases and taboparesis in nine cases, while there were ten clinically negative but spinal fluid positive cases. In the two cases in which paresis was diagnosed, tabes could not be excluded in the presence of major symptoms of paresis.

Additional evidence as to the type of cerebrospinal disease present was furnished by the spinal fluids examined. The colloidal gold curve is recorded in forty-six cases. In this group twenty-five showed the characteristic curve ordinarily associated with tabes, twelve showed a descending curve characteristic of paresis, and in nine the colloidal gold curve was flat or negative. A larger number of cases, therefore, viewed from this factor indicated a preponderance of tabes over other forms. In the majority of cases in which paresis existed, taboparesis was undoubtedly present. Spinal fluid Wassermann reactions were positive in twenty-six cases, negative in nineteen, and doubtful in one of forty-six cases in which this factor was available for study. Cell counts are recorded in thirty-five cases, in which in nineteen less than 5 cells per cubic millimeter were found. A count higher than 10 occurred in only seven cases. The organic solids of the fluid in this group showed no increase in eighteen cases and a very high increase in only six.

The clinical study of our cases from the standpoint of existing syphilis as well as the spinal fluid reactions indicates to us that ordinarily when the arthropathy is present the cerebrospinal disease is inactive or only slightly progressive.

In other words, we were struck by the large number of cases in which the condition occurred in apparently stationary or arrested cases of tabes. Few of our patients showed any marked symptoms of tabetic disease, such as root pains, crises, optic atrophy or other symptoms of cord disease, and singularly few sought the hospital for symptoms referable to central nervous system disease, the vast majority seeking relief from the joint symptoms.

The association of trauma and the effect of injury in producing the disease have been much stressed by various authors. Our investigation of this factor shows that, of seventy-six cases in which trauma was investigated, in forty-seven cases, or 62 per cent, there was no history of any injury. In eighteen cases, or 24 per cent, joint disease was definitely established shortly after some trauma. In this connection it is interesting that seven occurred following acute arthritis. In one group of four cases, injury to the joint preceded a visible pathologic change by a period of more than five years. Four patients could on suggestion remember slight injury antedating the joint involvement.

In interpreting these figures it must be remembered that suggestion may have influenced the positive history in many cases.

In considering the large number in which a well developed Charcot's arthropathy seemed to have dated from an injury, it may properly be questioned whether the injury was the exciting cause or, as seems to us more likely, the accident resulted from structural weakness in the joint due to the disease already being present before it became clinically evident to the patient. It is our belief that actual clinical injury is rarely a causal agent but that when it occurs it is due to inherent weakness in an already diseased joint.

The high incidence of Charcot's arthropathy in tabes is at first suggestive but becomes less so when one considers that only a small percentage of tabetic patients develop the syndrome. From the first description of the condition by Charcot, a controversy has existed as to the actual relationship of the tabetic cord to the development of the diseased joint.

Charcot believed that the joint changes resulted from a destruction of trophic fibers in the cord produced by the tabes.

Volkmann stated that they were merely the result of increased trauma in the ataxic individual. The association of true Charcot's arthropathy with syringomyelia and with such other cord lesions as spina bifida and direct injury to the cord, as by stab wound (Riedel [4]), suggest some additional cause besides the tabes as the ultimate etiologic factor. In this connection other causes than tabes have been described by Vigne, Joffroy, Salamon, Kermission, Lehmann,[5] Maliwa [6] and Duncan.[7]

The existence of conditions other than tabes as the ultimate etiologic factor is suggested by Eloesser's [8] brilliant experiments in which, by cutting the posterior nerve roots in cats, he produced changes which were identical with those seen in Charcot's arthropathy in man. Eloesser believes that such lesions are not related to a syphilitic arthritis or that the joints are the result of destruction of so-called trophic fibers. He believes that the joint changes are due to "trauma and a lack of warning sense of pain." Against this view is that of Cotton,[9] who believes that the joints should be consid-

4. Riedel: Berl. klin. Wchnschr. **20:** 252 (April 23) 1883.
5. Lehmann: Med. Klin. **13:** 629 (June 10) 1917.
6. Maliwa: Med. Klin. **13:** 704, 733 (July) 1917.
7. Duncan, J. H.: Neuropathic Arthritis, J. A. M. A. **79:** 1987 (Dec. 9) 1922.
8. Eloesser, Leo: Ann. Surg. **66:** 201 (Aug.) 1917; A Sign Occurring in Cases of Tabes Complicated by Charcot Joints, J. A. M. A. **77:** 694 (Aug. 20) 1921.
9. Cotton, F. J.: Ann. Surg. **72:** 488 (Oct.) 1920.

ered as syphilitic arthritides. Philips and Rosenheck [10] emphasize the view that the joint condition is the result of peripheral nerve degeneration which they could demonstrate microscopically in a number of cases.

It is quite likely that all these views can be reconciled. One constant factor stands out in all the theories set forth as well as in the group of cases under our observation. In every instance the joints involved are associated with destruction of their afferent (proprioceptive) nerves, rendering them unable to compensate for injury. With each minor injury under these conditions, or with trauma which might be considered physiologic, further deviation in the structure of the joint occurs, resulting ultimately in the accumulated pathologic change which makes up the end-picture of Charcot's joint.

The condition which deprives the joint of its ability to compensate for injury is most frequently seen in destruction of the dorsal columns; therefore it is most frequently seen in association with tabes. It may, however, as well result from spina bifida, syringomyelia, direct injury, and by cutting of the posterior nerve roots.

The incoordinated movements associated with the ataxia resulting from tabes also play a rôle in subjecting the patient to greater stress by false motion and by greater susceptibilty to injury. In this connection, faulty posture as a result of hypotonia in tabes likewise becomes a contributing factor.

The primary factor, therefore, would appear to be the inability of the joint to compensate for injury, dependent on spinal cord disease, while the contributing factors are the various forms of insult to which a thus predisposed joint is exposed.

CONCLUSIONS

From our study we draw the following conclusions:

1. The greatest age incidence in Charcot's arthropathy occurs between 35 and 55.

2. The mode of onset is in the majority of cases gradual and insidious, and extends over a period of months or years.

3. The occasional apparently sudden production is frequently the result of trauma bringing into visibility an existing subclinical process.

4. Charcot's arthropathy occurs three times more frequently in men than in women, as compared with the incidence of tabes in the two sexes.

5. Polyarticular involvement is common, no joint in the body being immune, but the knee and ankle involvement occur far more commonly than do any other forms. Cerebrospinal syphilis is present in the majority of the cases. Its absence, however, in typical cases indicates that it is not the essential primary etiologic factor. Where present, the form of involvement is more commonly tabes.

6. The typical syndrome in the majority of cases seems to be an inactive or arrested cerebrospinal syphilis, few symptoms referable to the syphilis being present ordinarily.

7. Subclinical insults, such as faulty posture and ataxia, play a larger rôle than actual trauma antedating the condition.

8. The loss of afferent nerve paths to the joint, rendering it unable to compensate for injury, would seem to be the ultimate etiologic factor.

10. Philips, H. B., and Rosenheck, Charles: Neuro-Arthropathies: A Consideration of the Etiology and General Characteristics, J. A. M. A. **82**: 27 (Jan. 5) 1924.

BILIARY TRACT DRAINAGE

A NEW MANNER OF COMPARING THE LYON METHOD WITH THE SPA METHOD OF THERAPY *

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BALTIMORE

Since diagnostic biliary drainage was popularized by Lyon [1] in 1919, the sponsors of the method have enthusiastically advocated the therapeutic use of the duodenal tube in diseases of the gallbladder and bile ducts. To me the superiority of this newer method over the older spa treatment has not been clinically apparent; unless, perhaps, a beneficial psychic effect has been produced in the neurotic patient by the extraction of dark, malignant-looking bile.

RESULTS OF SOPER AND OF DUNN

Soper,[2] in 1924, reviewed the history of the therapeutic uses of magnesium sulphate, the principal salt in practically all spa waters that are used in biliary tract disease. He was favorably impressed with the therapeutic results obtained by duodenal drainage following the instillation of a solution of magnesium sulphate according to the method of Lyon. He was quick to observe that only a portion of the salt could be recovered through the tube three minutes after its instillation, and that active purgation followed the procedure. The feces of patients who had had Lyon drainage for a period of several hours were unaltered in color. From these observations Soper concluded that the bile, like the magnesium sulphate, was recovered only in part through the tube, the intestine sharing with the duodenal tube the rôle of drainage tube.

Of a series of twelve cases of catarrhal jaundice, Soper treated five by the Lyon method and seven by a modified spa method. He gave to the latter group from one-half ounce to 2 ounces (15 to 60 cc.) of a saturated solution of magnesium sulphate to which a small quantity of compound tincture of cardamom had been added. These doses were given on a fasting stomach every morning. The clinical results in the two groups were identical. This encouraged him to give magnesium sulphate in other biliary tract conditions and he reported, "My results were as good as, if not better than, they had been by the use of the duodenal tube." He concluded that "there is no essential difference in the therapeutic effect of magnesium sulphate whether it is given by mouth or applied by means of the duodenal tube."

My own clinical experience corresponded with that of Dr. Soper. It also confirmed the observation of Dunn [3] and others, who reported that magnesium sulphate solutions introduced by mouth around the duodenal tube produced the usual A-B-C bile sequence exactly as well as when magnesium sulphate was injected through the tube.

I believed that another basis for comparison of the two methods of therapeutic drainage would be available if it were possible to determine in both procedures the concentrations of magnesium sulphate in the duodenum.

* From the Gastro-Intestinal Department of Johns Hopkins Hospital.

1. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Biliary Ducts, J. A. M. A. **73**: 980 (Sept. 27) 1919.

2. Soper, H. W.: The Story of Magnesium Sulphate with Especial Reference to Its Use in Biliary Drainage, Tr. Sect. Gastro-Enterol. & Proct., A. M. A., 1924, p. 160; Am. J. M. Sc. **169**: 398 (March) 1925.

3. Dunn, A. D.: Some Problems Involved in the Lyon-Meltzer Method of Biliary Drainage, Northwest Med. **21**: 341 (Sept.) 1922.

METHOD OF EXPERIMENT

Sulphates are practically absent from human bile.[4] The intraduodenal concentration of magnesium sulphate can be determined from the amount of sulphate recovered in the bile fractions obtained after drainage by Lyon's method and after oral administration of the salt. Accordingly, investigations with Lyon's technic were made in five patients (in a sixth, the duodenum could not be intubated). The patients appeared after a strict twelve-hour fast. The tube was located in the duodenum in the usual manner and its position in all cases was confirmed by means of the fluoroscope. Then 60 cc. of Lyon's magnesium sulphate solution [5] was introduced through the tube, and, after two minutes, aspiration or siphonage was begun. The specimens of duodenal fluid were separated into five-minute portions until definite C bile was obtained; i. e., in the first collection was all of the duodenal fluid obtained from two minutes after the instillation of the magnesium sulphate until five minutes after its instillation (really a three-minute specimen). In the second collection was the fluid obtained in the five to ten minute period; in the third was the fluid in the period from ten to fifteen minutes, and so on. The amount of return and the color were noted. The number of grams of magnesium sulphate per hundred cubic centimeters of duodenal content was calculated by a slight modification of the method of Rosenheim and Drummond [6] for the determination of inorganic sulphates. The results of these analyses are shown in chart 1.

With another group of five patients, exactly the same preparations were made. The duodenal tube was passed in each case, and each tube was accurately located in the second portion of the duodenum. As the tube passed through the stomach, no fluid was extracted or injected. Then 60 cc. of a saturated solution (at 20 C.) of magnesium sulphate was given by mouth to each patient. This was followed by a "chaser" of 30 cc. of tap water. Aspiration or siphonage of the duodenal fluid was immediately begun and the bile-stained liquid recovered was divided into the fractions obtained over five-minute intervals. These specimens were treated exactly as were those obtained when the magnesium sulphate was given through the tube. The results are plotted in chart 2. The accompanying table shows some comparative figures in the analyses.

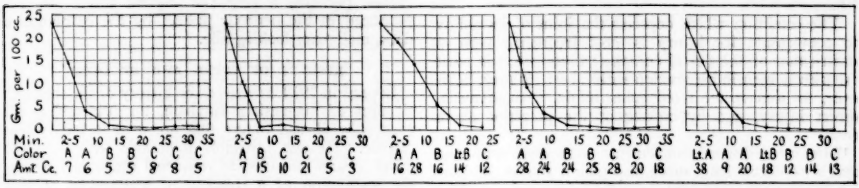

Chart 1.—Intraduodenal concentrations of magnesium sulphate ($MgSO_4$, $7H_2O$) in bile obtained according to Lyon's technic.

COMMENT

From the charts and the table it may be seen that in a small group of cases the intraduodenal concentrations of magnesium sulphate when the drug was given by mouth at least equaled, and usually exceeded, the concentration of the salt when given through the duodenal tube according to Lyon's method. So far as I know, no other figures have been published on this particular point.

Further, the higher concentrations of magnesium sulphate were maintained longer when the salt was given by mouth than when it was given by way of the tube. The A-B-C bile sequence was obtained equally well by the two methods. I believe that this adds another link to the chain of evidence for the efficacy of concentrated solutions of magnesium sulphate given by mouth in drainage of the biliary tract.

Lyon has objected to the oral administration of magnesium sulphate because he feels that "magnesium sulphate is chemically changed by the acid gastric juices and it is no longer magnesium sulphate when it reaches the duodenum.[7] Again, he felt that magnesium sulphate was partly changed by the acidity of the gastric juice to sodium sulphate before reaching the duodenum and thus constricted rather than relaxed the unstriped muscle of the duodenum and Oddi's sphincter.[8]

Intraduodenal Concentrations of Magnesium Sulphate *

Case	Highest Concentration $MgSO_4$, $7H_2O$ (Grams per 100 Cc.)	Lowest Concentration $MgSO_4$, $7H_2O$ (Grams per 100 Cc.)	Average Concentration $MgSO_4$, $7H_2O$ (Grams per 100 Cc.)
1	23.0	0.36	5.39
2	23.0	0.12	5.14
3	23.0	0.24	8.85
4	23.0	0.12	4.71
5	23.0	0.15	6.09
6	36.31	6.15	15.82
7	27.58	9.54	17.75
8	21.52	3.07	11.64
9	27.91	2.15	13.40
10	30.44	11.83	19.45

* Cases 1 to 5 were treated according to Lyon's technic; cases 6 to 10, by the method of oral administration.

Dr. A. P. Briggs of the department of chemistry of Washington University was quoted by Soper [2] on this point. Dr. Briggs said: "Magnesium sulphate is certainly unchanged in passing through the stomach, unless, perhaps, in concentration; it may be diluted, of course, depending on the amount of fluid in the stomach,

4. Hammarsten-Mendel: A Text-Book of Physiological Chemistry, ed. 6, New York, John Wiley & Sons, 1912, chapter VIII, p. 412.

5. Prepared as directed by Dr. Lyon in a personal communication. A saturated solution of magnesium sulphate (crystalline) was made with distilled water. After filtration, one part of this was diluted with two parts of water. Dr. Lyon terms this "magnesium sulphate solution (33 per cent volumetric)." One hundred cubic centimeters of a saturated solution of magnesium sulphate at 20 C. contains 33.7 Gm. of anhydrous magnesium sulphate, or 69 Gm. of the crystalline salt. After dilution with two parts of water, this contains 11.3 Gm. of anhydrous magnesium sulphate, or 23 Gm. of crystalline magnesium sulphate per hundred cubic centimeters.

6. Rosenheim, O., and Drummond, J. C.: Biochem. J. **8:** 143 (April) 1914.

7. Lyon, B. B. V.: A Brief Consideration of Nonsurgical Gall Tract Drainage as an Aid to the Surgeon, Pennsylvania M. J. **25:** 392 (March) 1922.

8. Lyon, B. B. V.: The Nature, Diagnosis and Management of Cholecystitis and Gall Tract Disease with a Résumé of the Diagnostic and Therapeutic Value of Duodenal Biliary Drainage, Proc. Roy. Soc. Med. (Sect. Med.) **21:** 1-9 (Dec.) 1927.

but hydrochloric acid has no action on magnesium sulphate." I cannot entirely concur in the statement of Dr. Briggs, for certainly the hydrochloric acid of the fasting stomach content forms some magnesium chloride, although, in my opinion, a negligible quantity. Just how much magnesium sulphate might possibly be lost by conversion to magnesium chloride is a problem that arises in this connection.

Carlson [9] states that the fasting stomach contains an average of 40 cc. of 0.2 per cent (or less) hydrochloric acid. This would contain 0.08 Gm. of hydrochloric acid. To this is added 60 cc. of a saturated solution (at 20 C.) of magnesium sulphate, or 20.22 Gm. of anhydrous magnesium sulphate. If all the hydrochloric acid in the stomach reacted with magnesium sulphate, the following reaction would take place:

$$\underset{120.38}{MgSO_4} + 2\,HCl \rightleftarrows \underset{95.24}{MgCl_2} + \underset{98.06}{H_2SO_4}$$

Let x = Gm. of $MgSO_4$ changed to $MgCl_2$ by the HCl.

$$\text{Then } \frac{x}{0.08 \text{ (or weight of HCl)}} = \frac{120.38}{72.92}$$

$$x = 0.132 \text{ Gm. of } MgSO_4 \text{ converted to } MgCl_2$$

This is 0.65 per cent of the 20.22 Gm. of magnesium sulphate that was given. Certainly this loss would be of no consequence. In fact, the amount of magnesium sulphate that becomes magnesium chloride is less than this figure, for the hydrochloric acid is not all used. The figures given represent the amount of magnesium sulphate that would be lost if the reaction were complete. Could such an amount be of physiologic significance?

The advocates of therapeutic biliary tract drainage through the duodenal tube assert that by removal of the "toxic" and infected bile through the tube the body is rid of a harmful substance. Such, they say, is not the case when it passes through the intestine. They note clinical improvement from Lyon drainage similar to that resulting from surgical drainage of the biliary tract. Is drainage by way of the intestinal tube less effective, or is it actually harmful? In my judgment the clinical results obtained by the spa method equal those resulting from Lyon's continuous duodenal drainage; and to me the data recorded here make clear one reason for the success of the former method. Further, I do not believe that, in the usual case, biliary drainage through the intestine is harmful. Bacteria in the intestinal tract are not usually virulent as long as the bowel lumen is patent and no local injury to the wall exists. It remains to be proved that bacteria from the biliary tree are any more virulent when they are drained into the intestine than are the bacteria normally present in the colon and lower small intestine. The typhoid carrier is not harmed when bile laden with the bacilli of typhoid passes into his intestinal tube. Nor does the appendical or pelvic abscess cause systemic injury by rupturing into the patent and otherwise uninjured intestine. Why should other organisms be more virulent?

It is generally conceded that any type of medical drainage has its place only in the treatment of the milder infections of the biliary tract, or in more severe infections when for some reason operation is not advised. In the latter group, little is expected of any medical method. In the former group the liver is not ordinarily injured to an extent which makes one feel that it is unable to exercise its detoxicating function on whatever poisons may result from the action of the ordinary intestinal flora. Whatever toxins may be present in bile drainage from the milder infections can be made innocuous by the great margin of safety of the liver.

Of the nature, absorption and fate of the toxins that are presumed, little is known.

It has been demonstrated that fats and certain proteins, as that of egg yolk, are more efficacious than magnesium sulphate in the production of bile flow. Certainly gallbladder shadows in roentgenograms decrease in size following the usual "fat meal." The question is asked, "Is not food drainage sufficient?" To this, one can answer only that food drainage is probably helpful in the patients who are not obese "gallbladder types." However, in the usual patient with biliary tract infection, concentrated solution of magnesium sulphate is clinically very satisfactory. I suggest that the patient be spared the time and expense of duodenal tube drainage, and that he be directed to substitute saturated magnesium sulphate solution, from which he may expect similar results.

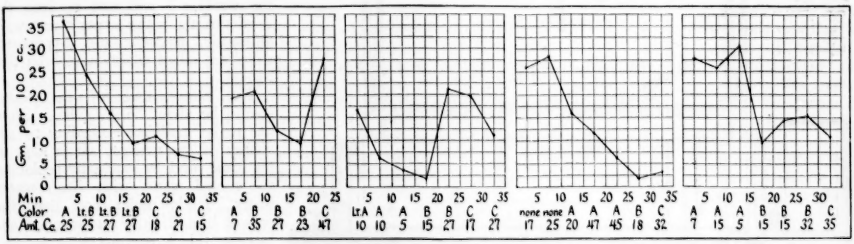

Chart 2.—Intraduodenal concentrations of magnesium sulphate ($MgSO_4$, $7H_2O$) after oral administration.

SUMMARY

1. In a comparison of the intraduodenal concentrations of magnesium sulphate after administration of the drug by Lyon's method and after its oral administration in saturated solution, higher average concentrations of the salt were found in the latter case; in fact, the maximum concentration when the salt is given orally usually exceeds the maximum concentration in the duodenum when magnesium sulphate is given by Lyon's technic. High concentrations of magnesium sulphate are maintained longer in the duodenum by the oral method than after a single stimulation by Lyon's method.

9. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press, 1916, chapter XIV, p. 232.

2. Chemical opinion and data contradict the view that magnesium sulphate in concentrated solution is appreciably changed by passage through the stomach except for dilution.

3. Objections to the drainage of bile through the intestinal tube have been discussed.

12 East Eager Street.

THE CONTINUOUS BATH THERAPY OF HEBRA

ITS USE IN THE ALLGEMEINE KRANKENHAUS IN VIENNA *

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About forty years ago a station for continuous baths was opened in the Allgemeine Krankenhaus in Vienna by the dermatologist Hebra. In spite of the fact that these baths have proved to be a most valuable therapeutic agent in the treatment of many diverse diseases, they are practically unknown in the United States and we feel that American physicians should become better acquainted with their beneficial influence.

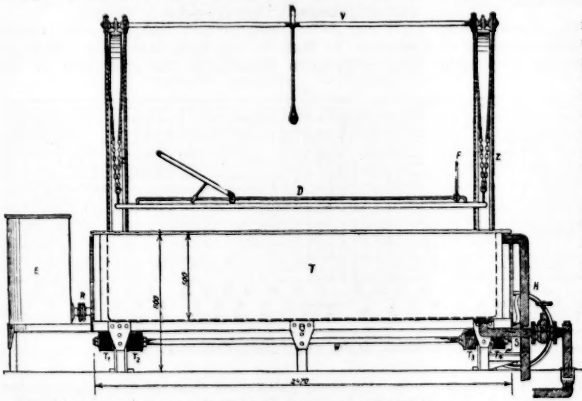


Fig. 1.—Lateral diagram of continuous bath apparatus in use in the Allgemeine Krankenhaus in Vienna: *E*, mixing chamber; *R*, water inlet; *H*, hand wheel; *T* 1-4, elevating gear; *D*, bed frame; *K*, back support; *F*, foot support; *T*, bath-tub. The diagrams are taken from Kerle, W.: Wasserbettanlagen im engeren Kriegsgebiete, Vienna, Emil Siegel.

In 1917 the old primitive station was replaced by a new one which is still in use. Most American physicians who visit our clinic are totally unfamiliar with this method of treatment, and after they have seen it they express their desire to learn further details about it. It is because of this interest that I felt justified in giving this descripton of our work.

There are twenty-two tubs in the station. A continuous bath consists of a large rectangular zinc-plated copper tub surrounded by a wooden insulating coating, with removable boards covering it on top. Lateral and cross-section views are shown in the accompanying illustrations. There is a mixing chamber at the head of the tub where the hot and cold water are mixed before flowing in at the bottom of the tub. The two faucets are regulated by means of a key, so that it is impossible for the patient to alter the temperature of the water. There is a water outlet for emptying the tub and an opening to drain off the overflow. The bed is suspended inside the tub; it consists of a zinc-plated copper wire frame and is covered with a felt blanket. By means of pulleys and a pinion rack at each end, the bed can be lifted, lowered, and fixed in any position.

It was Hebra who found out in 1861 what a surprising effect this treatment has in different diseases. It was he also who showed that a person may be kept in a warm bath for many hours, days, weeks or even months without harmful effects. Circulatory disturbances and pneumonia are the general contraindications. A point often raised by inexperienced physicians is the danger of the sleeping patient drowning. Actually a case of drowning has never occurred during the entire practice of this treatment. The sleeping patient will wake up the moment the angle of his mouth touches the surface of the water. Unconscious or drowsy patients as well as children are kept safe by means of a sheet which is wound around their chest under their arms and fixed to the tub. Well trained nurses are of course a conditio sine qua non.

Ordinary water from the city mains is used. It is hardly ever necessary to add any drugs, although in some cases of psoriasis we add tar because it strengthens the action of the water. I will not go into the details of the many experiments with antiseptic, isotonic and hypertonic solutions, all of which have been discarded.

The temperature of the water should be about 85 F. (29 C.), but has to be modified according to the wishes of the patient. It is kept at the same level by gradually replacing the cooled water with fresh warm water. It is understood that the patient himself may never open the faucets; this is prevented by the key system already mentioned.

A theoretically serious objection against our baths that has often been raised, especially by surgeons, is the possible propagation of infections by the soiled water from one part of the body to another, particularly in patients with clean operative wounds. But this has proved not to be true.

The tub is cleaned once, twice or several times a day when necessary, because very sick patients often urinate and defecate into the water. For the purpose of cleaning the tub, the patient is removed to a dry bed and covered with a warm blanket while the tub is drained and refilled. It has often been attempted to provide automatic temperature regulation and continuous renewal of the water, but such apparatus has proved to be rather complicated. Therefore it has been abandoned.

We have often been asked whether it would be worth while to install such a station with continuous baths in some other city. This, of course, would be a rather expensive and complicated proposition, and therefore applicable only to the larger hospitals. But with the following short outline of the sphere of indications for the continuous baths, I hope to convince my readers of the enormous usefulness of this way of treating many different diseases.

* From the dermatologic clinic of Professor Arzt.

TYPES OF CASES SUITABLE FOR TREATMENT BY CONTINUOUS BATHS

The best method of classification of the types of cases suitable for continuous baths is according to the different branches of medicine: dermatologic, surgical, gynecologic, neurologic and medical.

Dermatologic.—For the dermatologist, cases of universally or very extensively injured skin are indicated for treatment with continuous baths. Hebra's idea of putting certain patients with skin diseases into bathtubs arose from the observation that in smallpox the pustules situated inside the mouth on the always moist mucous membrane are more quickly cleaned and healed than the ones on the outer skin. Smallpox fortunately at present is practically only of theoretical interest to us.

Hebra soon submitted another severe skin disease, pemphigus, to the new treatment. Although the water does not actually heal pemphigus it shortens the duration of the rash and is a great relief to the patient.

In general, one has to differentiate between purely symptomatic relief and actual healing by the continuous baths. In many cases the two effects are combined. The popularity of the water-baths among the Viennese, even the laymen, is due to the fact that almost all the cases of extensive severe burns are brought to this ward of our hospital. It was again Hebra who started this treatment for burns. For absolutely fatal cases the water simply relieves pain; it is not able to prolong or to save the lives of the patients. These most severe cases of burns are treated from the beginning with our method; if the case is a doubtful one, we do not put the patient into the tub at once but first treat him by other well known methods to avoid too great a strain on the heart. Later on, when the burned areas are covered with thick layers of necrotic tissue, the water is of the greatest value in accelerating the separation of the crusts. Within a relatively short time it is possible to remove mechanically the macerated necrotic masses; the wounds are soon cleaned and the granulations grow rapidly. Furthermore, the patients feel very comfortable in the water, the painful removal of dressings is avoided, and there is no bad odor. Depending on the state of the heart, the patient is kept in the water continuously or for a few hours each day. Cardiac stimulants are given in every case.

The continuous bath is a very good method for the treatment of erysipelas. Rose in 1889 showed that it is capable of checking the spread of this otherwise not easily controllable disease. But because of the infectiousness of erysipelas we do not keep such patients in this ward. It would, however, be worth while to have a small number of "water-beds" isolated for their treatment.

Every dermatologist knows that acute weeping eczema of a large area of the skin can reduce both the patient and the physician to a state of helplessness. Here the continuous baths bring relief within a short time in a much more convenient way than dressings.

The same is true of acute extensive dermatitis and erythrodermia of any kind. It is often astonishing how the almost unbearable itching vanishes within a few hours; the improvement is sometimes so rapid that the patient gives an absolutely changed clinical picture after a short time. Later on, the bath treatment can be combined with bland ointments. Especially impressive and in many cases life-saving is the effect of the water in cases of severe arsphenamine dermatitis, which are often combined with the much dreaded pyodermia.

Psoriasis vulgaris of a large or universal extension can easily be treated in the water-bath. The scales are readily softened and there is also a marked healing influence of the water on the plaques themselves. Cases in which other medications have failed ought to be submitted to this method. In acute eruptions of psoriasis almost all the specific drugs for this disease, even arsenic acid, may produce an irritation; such cases can be treated in the water-bath in a most satisfactory way. The rare arthropathic psoriasis is especially indicated for the water-baths, because the latter have a good influence on both the skin and the joint disorders.

Our method is frequently of great value in the treatment of ulcers produced by roentgen rays. Often the unrelievable pains are soothed by the water and the formation of fresh granulations is greatly stimulated. It also gives much relief to the severe itching of essential and symptomatic pruritus.

One of the most frequent indications for the use of the continuous baths giving excellent results is in the treatment of the decubitus, or bed-sore. In cases of bed-sore, the first thought of every one in our clinic is the "water-bed." The surgical, neurologic and medical wards are continually sending us cases of decubitus to be treated and healed. The hydrostatic conditions in the water, floating the body and so preventing it from pressing on the mattress, combined with the steady rinsing and macerating (perhaps with other factors not yet studied, such as the osmotic interchange of fluids), make the decubital ulcers heal rapidly. The sloughing tissues are cast off and the wound is cleansed within a few days; then fresh granulations appear and the epithelium starts growing over the defect. Nursing of such patients is much easier in the water and septic infections are avoided.

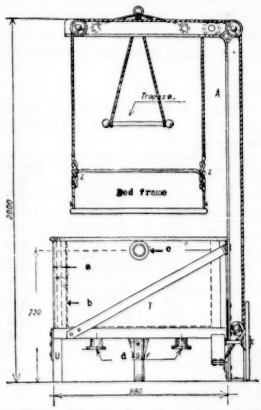


Fig. 2.—Cross-section of continuous bath apparatus: *a*, wooden wall with air space; *b*, 1 mm. zinc plated copper lining; *c*, overflow; *d*, outlet. The hand wheel and elevating gear are at the right.

Surgical.—A large contingent of the cases treated in this ward are the patients with osteomyelitis or caries with fistulas discharging pus more or less abundantly. The fact that dressings are not necessary means a great relief to the patients and the nurses. Here treatment with water combined with operative measures is to be recommended.

The treatment of infected wounds by means of continuous baths, especially of phlegmonous processes, is of the greatest importance. In such conditions, water often gives better results than any other treatment. Progressive phlegmons whose advance even the most radical surgical intervention could not stop have often been healed by our method. During the World War this was most striking. Our station proved to be much too small but still saved an enormous number of "lost"

cases. In this respect the water-bath can be compared only to the Carrel-Dakin method used in the United States, although it is less complicated, and requires less nursing and no material for dressings. Of course, the water can act effectively only in places accessible to it. Therefore, in the treatment of phlegmons, incisions have to be made in the usual manner. In thoracic empyema, good results have not been obtained.

Fistulas of the stomach, gallbladder, small intestine and urinary bladder, with the consecutive, often unavoidable irritation of the skin, are favorably influenced by the water. Here the irritant discharge is immediately diluted and washed away.

As already mentioned, it is interesting that in patients who have to be put into the water with fresh operative wounds, infection never occurs. I recall, for instance, patients with tumors of the spinal cord, who had been treated in the bath for intractable bed-sores, in whom laminectomy incisions healed by first intention in spite of the patients having been replaced in the water right after the operation. Whether it is the electrodynamic action of the metal walls of the tub preventing the growth of bacteria, or the suppression of the pathogenic germs by saprophytes, there actually occurs no infection in the water, provided its influence is a continuous one.

patients were put into warm baths by psychiatrists as long as a hundred years ago.

I do not know of any station with continuous baths in the United States, with the exception of the psychopathic hospitals. However, we hope to have aroused sufficient interest in our useful, well tried method to stimulate its wider application to conditions encountered in general surgery, medicine and dermatology.

2, Kantgasse, Wien I.

TRICHINOSIS

AN OUTBREAK INVOLVING TWENTY CASES AND ONE DEATH *

J. C. WILLETT, D.V.M.
AND
C. L. PFAU, A.B.
ST. LOUIS

It is generally known that the consumption of raw pork is attended with danger from trichinae. Processed or cured pork and sausages containing pork intended for consumption without cooking are free from this danger if inspected by federal authorities or if adequate state or municipal regulations are enforced. However, when there is no official inspection, methods of curing are likely to be inadequate for the destruction of *Trichinella spiralis*. To secure the destruction of this organism the federal regulations [1] require pork used in sausages or in any other product intended to be consumed without cooking to be kept for twenty days at 5 F. This to be followed by smoking for not less than six hours at a temperature of not less than 95 F. and then by drying for not less than ten days at a temperature not lower than 40 F.

TABLE 1.—*Cardinal Clinical Symptoms in Fourteen Cases of Trichinosis*

Case*	Age	Sex†	Incubation Period, Days	Temperature‡	Character of Fever	Profuse Sweating	Edema	Myositis	Complications
1	22	♂	15	103	Remittent	No	Eyelids	Neck and extremities	None
2	27	♀	13	104	Remittent	Yes	Eyelids	Neck and extremities	None
3	21	♂	15	106	Remittent	Yes	Eyelids and face	Neck and extremities	None
4	49	♂	11	103	Remittent	Yes	Eyes and face	Extremities	
5	63	♀	19	100	Remittent	Yes	Eyes	Neck and extremities	Temporary paralysis of right leg
6	8	♀	4	103.5	Intermittent	Yes	Eyes	Extremities	None
7	2½	♂	10	102	Intermittent	Yes	Eyes and face	General	None
8	4	♂	12	102	Remittent	Yes	None	General	None
9	38	♀	12	102	Intermittent	Yes	None	Extremities	Lobar pneumonia
10	52	♂	27	103	Remittent	Yes	Eyes and face	Extremities	Bronchitis
11	20	♂	20	100	Remittent	Yes	Eyes and face	Extremities	None
12	22	♂	19	103	Intermittent	No	Eyes and face	Abdominal and diaphragm	Nephritis
13	43	♀	9	103.5	Intermittent	Yes	Eyes and face	General	Bronchitis
14	37	♂	10	103	Intermittent	Yes	Eyes and face	General	General peritonitis

* All the patients were white persons.
† In this column ♂ indicates male; ♀, female.
‡ Maximum temperature recorded.

In many cases the surgeon needs the action of the water to bring a patient into a condition in which operation is possible, as for instance fractures of the backbone with decubitus or duodenal fistulas with digestion of the abdominal wall.

For frozen extremities the continuous baths have proved to be of great value, especially during the war. In many cases extremities in which amputations had already been planned were saved by this conservative measure; at least the loss of tissue in the majority of cases was smaller than after other forms of surgical treatment.

Medical.—Patients with very painful polyarthritis of various origin often state that their sufferings are considerably lessened by the continuous bath.

Neurologic.—In many neurologic diseases, such as spondylitis, tabes, multiple sclerosis and myelitis, the continuous bath symptomatically helps the patient more than anything else except morphine. The great importance of healing a decubitus and thereby preventing general infection has been mentioned. The water also has an enormously soothing influence in cases of tetanus, in which a new convulsion is likely to develop with the slightest irritation. This explains why insane

This outbreak resulted from the practice of a butcher who purchased hogs at intervals from the National

* From the St. Louis Health Division Laboratories.
* This report was made possible through the cooperation of Drs. J. A. Smith and J. A. Farrell of the Communicable Disease Section of the St. Louis Health Division.

1. Edelmann, Mohler and Eichorn: Meat Hygiene, p. 421.

Stockyards in East St. Louis, Ill., and slaughtered them on his own premises. He made part of this meat into green sausage and a part into summer sausage. When questioned by city and state authorities he admitted that his curing process did not conform to the federal government standard for summer sausage. May 11, 1929, he marketed about 60 pounds of such sausage in St. Louis, peddling it from door to door to his regular customers.

After the vender, who himself had been ill with the disease, was located, a list of his customers was obtained. It was found that those who gave a history of eating the sausage purchased on May 11 had symptoms of trichinosis. In fourteen cases information as to the clinical course of the disease was obtained from the physician in attendance. The cardinal clinical symptoms are outlined in table 1. It will be noted that the most persistent clinical symptoms were edema of the eyes and face and myositis. It will also be noted that the incubation period varied from four to twenty-seven days, with an average of fourteen days.

TABLE 2.—*The Blood Picture in Twenty-One Cases of Trichinosis*

Case	Age, Years	Polymorphonuclears	Eosinophils	Basophils	Lymphocytes	Endothelials	Day of Disease
1	22	45	16	0	37	2	19th
2	27	58	12	1	26	3	21st
3	21	55	31	0	13	1	10th
4	49	39	18	1	42	0	30th
5	63	62	22	0	15	1	9th
6	8	66	17	0	16	1	22d
7	2½	53	4	0	39	4	15th
8	4	74	18	1	7	0	10th
9	38	68	23	0	8	1	13th
10	52	66	21	0	10	3	11th
11	20	66	20	1	9	4	14th
12	22	48	34	1	16	1	6th
13	43	64	22	1	10	3	25th
14	37	80	3	0	6	2	14th
15	32	27	20	0	52	1	25th
16	8	59	7	0	33	1	15th
17	20	27	45	1	27	0	18th
18	29	39	11	1	46	3	30th
19	25	57	10	0	27	6	24th
20	53	70	4	0	19	7	30th
21	29	21	56	0	23	0	35th

Repeated blood examinations were obtained in only a few of the cases. It will be noted in table 2 that most of the cases showed a marked eosinophilia. Case 7 did not show an eosinophilia on the fifteenth day. Case 13 also did not show an increase in the eosinophils on the eighteenth day; however, on the twenty-fifth day there was an increase of 22 per cent. Repeated differential blood counts in case 14 did not show an eosinophilia but did show an infectious blood picture. This patient died on the sixteenth day of the disease and an autopsy revealed generalized peritonitis. *Trichinella spiralis* was demonstrated in the muscle tissue in this case.

SUMMARY

In an outbreak of trichinosis involving twenty cases, with one death, thirteen of the cases were the result of eating improperly cured summer sausage, and eight cases and one death were due to the eating of raw pork sausage. The typical blood picture (eosinophilia) may be obscured as the result of complications. In all these cases there were pronounced symptoms of trichinosis before the first case was diagnosed twenty days from the beginning of the outbreak. In most of the cases a tentative diagnosis of typhoid or malaria was made.

REFRIGERATING SYSTEMS AND PUBLIC HEALTH

SHIRLEY W. WYNNE, M.D., D.P.H.
Commissioner of Health
AND
JOHN OBERWAGER, M.D.
General Medical Expert, Department of Health
NEW YORK

Refrigerating systems may be discussed from two angles, the fire hazard and the health hazard. The code of ordinances of the city of New York relating to these systems is, with several exceptions which will be discussed in detail, adequate to safeguard life and property. The laws of New York City relating to refrigerating systems were adopted in 1927, and are based on a thorough study and report made by C. K. Michaels, engineering inspector of the Bureau of Fire Prevention of the city of New York.

In this article we give first a brief discussion of the present laws in force in New York with a view to show the safety afforded by strict compliance with all the provisions of the code, and follow this with several recommendations which, in the light of newer knowledge on this subject, should be incorporated in the present law. In New York City the inspection of refrigerating systems is at present under the control of the fire commissioner.

The following refrigerants are used in the refrigerating systems in New York City: ammonia, carbon dioxide, sulphur dioxide, methyl chloride, ethane, propane, isobutane, ethyl chloride, dichloromethane and dichloro-ethylene. No refrigerant may be used without a permit issued by the fire commissioner.

The refrigerating systems are divided into three classes according to their capacity:

1. Class A includes those containing not less than 1,000 pounds of refrigerant.
2. Class B includes those containing less than 1,000 and more than 20 pounds of refrigerant.
3. Class C includes those containing not more than 20 pounds of refrigerant.

The use of sulphur dioxide, methyl chloride, ethyl chloride or hydrocarbon refrigerants is not permitted in class A systems.

Installation of class B systems using ethyl chloride or hydrocarbon refrigerants is not permitted in the borough of Manhattan or in other built-up sections of the city.

Carbon dioxide is not used at present in class C systems. About 80 per cent of class C systems use sulphur dioxide. The remaining 20 per cent use ammonia, methyl chloride and some of the hydrocarbons.

The amount of methyl chloride in any household refrigerating system used in this city averages about 3 pounds.

PERMITS AND PERMISSIBLE LOCATIONS

It is unlawful to maintain or operate class A and B refrigerating systems without a permit. A permit is also required for class C systems, except those operated in a dwelling containing one or two families, in a tenement house used exclusively for dwelling purposes, or in a residence portion of a business building. Application for a permit must be made within forty-eight hours after the installation is completed. Only the refrigerant specified in the permit may be used in the system.

No class A or class B system may be installed in any public building until plans have been approved and

no refrigerant may be placed in the system until a permit has been obtained.

The direct method of refrigeration (one in which the refrigerant is circulated to the substance or space refrigerated) is not permitted in any building outside of the refrigerating machinery room, except (*a*) in buildings used exclusively for ice making or for refrigerating purposes, or both; (*b*) when not carried above the first floor of business buildings; (*c*) in the business section of business buildings, provided the entire system is confined to one floor in the space occupied by a single tenant; (*d*) in the business section of a residence building when not carried above the first floor; (*e*) in a residence building occupied by not more than two families; or in any building, provided a nonirritant and nonflammable refrigerant is used.

The law defines the refrigerating machinery room as any room in which a refrigerant is circulated, but does not include expansion coils when these are located in cold storage rooms or refrigerator boxes.

SEGREGATION OF REFRIGERATING MACHINERY ROOMS

All refrigerating machinery rooms in which an irritant refrigerant is used must be maintained vapor tight. All doors of such refrigerating machinery rooms which open into other parts of the building must be self-closing and close fitting so as to prevent the escape of vapor, and other openings that may permit the passage of vapor to other parts of the buildings must be vapor tight and kept closed.

No openings from elevator shafts in a refrigerating machinery room are permitted. This provision, however, does not apply to dumbwaiter shafts the door openings of which are protected with self-closing doors.

In class A and B systems in which an irritant refrigerant is used, the doors of the refrigerating machinery rooms must open outward.

VENTILATION

Each class A, B and C refrigerating machinery room must be independently provided with means for adequate ventilation to the outer air. The ventilation is to consist of a window or windows opening directly to the air, or mechanical means capable of exhausting the foul air from the room.

The term "multiple system" (as commonly used) refers to household units supplied by a central plant. It is not permitted in tenement houses. (A "tenement house" as defined by the laws of New York City is a house occupied by more than two families maintaining independent cooking facilities.)

Household units are reasonably safe. However, the subject of ventilation and segregation of rooms in which household units are located is not receiving the attention of any department at present, and the danger of the refrigerant percolating through the other rooms in cases of defective refrigerating systems must be guarded against.

The segregation of the refrigerating room is important in all cases in which an irritant refrigerant is used.

Refrigerating rooms using nonirritant refrigerants such as methyl chloride and hydrocarbons should be ventilated but not necessarily segregated, so as to allow dilution of the air as a safety factor.

The fire department has no jurisdiction in tenement houses used exclusively for dwelling purposes and two family houses using the class C system, and inspections, therefore, are not made by the fire prevention bureau.

Authorities in the engineering field agree that this city has a high standard of safety conferred by the New York code of ordinances governing the installation and operation of refrigerating systems.

The Public Health Service, the Bureau of Standards and the Bureau of Mines in Health News F-31A, released about Sept. 1, 1929, state that ammonia, sulphur dioxide and methyl chloride cannot be breathed with impunity but none are violent poisons when breathed for a short time in low concentrations. If the same amount of the three substances is considered, methyl chloride is the least poisonous of the three; but because with this substance the physiologic effects are quite different, it is hard to make a quantitative comparison. Sulphur dioxide and ammonia have strong odors which are easily recognized and are so irritating that no one is likely to breathe much of them if an escape is possible.

Methyl chloride has a slight and rather pleasing odor which probably would not awaken a sleeping person and might not be recognized by one who was awake. To this fact is to be attributed any greater hazard from methyl chloride than from other commonly used refrigerants. Most of the trouble attributed to methyl chloride has occurred in connection with multiple refrigerating systems installed in apartment houses (outside New York City).

In an article on methyl chloride poisoning from domestic refrigerators,[1] the health commissioner of Chicago states that the cases of methyl chloride poisoning which have been reported in Chicago were due to leaks in the apartment units in kitchenette apartments having multiple unit refrigerating systems. With such a system using from 100 to 200 pounds, a leak in the piping in any one unit may allow the escape of great quantities of methyl chloride into a single apartment.

In New York City the ventilation and the segregation of A, B and C types of refrigerating systems are provided for by the code of ordinances. Permits are issued by the fire department to all A and B types of refrigerating systems and to class C only in certain cases. At present no permit is required for class C refrigerating systems in private (one and two family) dwellings and in tenements when used for dwelling purposes exclusively. The fire department inspects all class A and B systems, but class C systems only when used for commercial purposes.

At present no city department inspects class C refrigerating systems in dwellings of one and two families or in tenement houses occupied for dwelling purposes exclusively. The present law with respect to the ventilation and the segregation of irritant refrigerating systems of the class C type in private dwellings and tenement houses is not enforced.

RECOMMENDATIONS

1. No refrigerating machinery room should be used for sleeping purposes.

2. All refrigerating machinery rooms should be properly ventilated, and those using irritant refrigerants should be properly segregated from the rest of the apartment.

3. A decision should be made as to which city department should make inspections of the refrigerating systems in tenement houses not at present inspected by the fire department or any other department.

505 Pearl Street.

1. Kegel, A. H.; McNally, W. D., and Pope, A. S.: Methyl Chloride Poisoning from Domestic Refrigerators, J. A. M. A. **93**: 353 (Aug. 3) 1929.

Clinical Notes, Suggestions and New Instruments

A TRANSPARENT MASK

DAVID KAPLAN, M.D., CHICAGO

At the suggestion of a colleague who saw me using it, I am here describing a transparent mask which I made several years ago to protect my face during oral and nasal examinations. It consists of a film and two round head paper fasteners one-half inch long. A roentgenogram that has been spoiled or is of no more value as a negative is washed of its emulsion. A 14 by 17 inch film when cut into four parts will make shields 7 by 8½ inches each, which is the proper size for the average face. From the center of one of the 7 inch ends, an isosceles triangle of 3 inch base and 2½ inch vertex is cut. Two holes as large as the heads of the paper clasps are then cut 1 inch from the 8½ inch sides and one-half inch from the cut 7 inch end (fig. 1). These can be reinforced by Dennison's gummed reinforcement cloth rings. The clasps can be purchased at any stationery store or removed from the Becton, Dickinson & Company biannual calendar blotter. These are placed on the head band 2½ inches from the center of the head piece with the heads out and the spread ends inward. In that the holes in the film are 6 inches apart and the clasps on the head band only 5 inches, this difference causes the film to bulge outward from the face when the film is placed on the head band just behind the mirror or head light (fig. 2). The cut-away triangle permits the bulging that is necessary to escape the nose and permit ventilation.

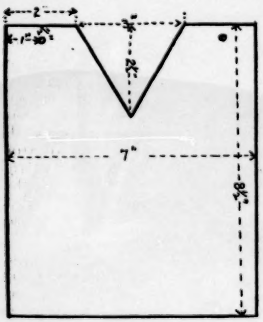


Fig. 1.—Film with isosceles triangle cut out. The measurements are indicated by the broken lines.

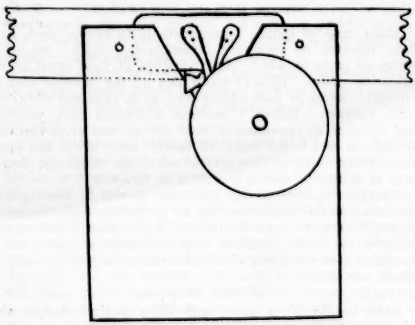


Fig. 2.—Film used on ordinary head mirror. The dotted lines indicate portions of the band behind the mask.

For portable purposes the film is rapidly detached from the heads of the clasps and carried in an envelop on the side of an ordinary emergency bag, while the band is folded in the usual manner. After examinations in contagious cases, the film can be washed by means of ordinary mercuric chloride solution or thrown away.

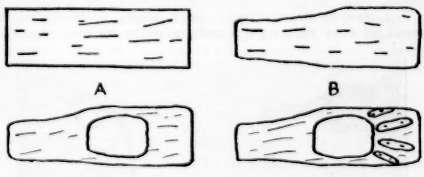
3501 Montrose Avenue.

A SPLINT TO PREVENT CONTRACTURE IN SURGERY OF THE HAND

E. L. GAGE, M.D., PHILADELPHIA
Intern, University Hospital

The splints commonly used to prevent digital contracture, namely, molded plaster-of-paris splints and banjo finger extension splints, have proved unsatisfactory when combined with wet dressings or the hand bath. The molded plaster splints crumble, and the adhesive tape finger extensions of the banjo splints become loosened and useless as the result of the moisture. Metal splints which can be combined with wet dressings have the disadvantage of obscuring x-rays. So much hand surgery is done in the presence of existing or potential infection that a splint that will prevent contracture of the fingers as well as permit the coincident use of wet dressings and x-rays is desirable.

The splint shown in the accompanying illustration was devised for a powder wound of the right palm. A boy, aged 13, had discharged a blank cartridge into the palm of his right hand. At operation the powder was found disseminated throughout the palmar space, around the flexor tendon sheaths, and between the metacarpals to the subcutaneous tissue of the dorsum of the hand. Extensive débridement was done and the powder and necrotic tissue were removed. The wound was packed with sterile gauze, and rubber dam drainage from the palm to the dorsum of the hand was instituted. The flexor tendon sheaths of the three middle fingers were therefore left unprotected, and the danger of infection and contracture was evident. The hand was dressed on a molded plaster splint, but the molded plaster did not allow for wet dressings or the hand bath, nor would a banjo splint have done so.



A, three-eighths inch pine board wide enough to cover palm of hand; *B*, board roughly shaped to conform to shape of hand; *C*, hole cut in board to serve as window; *D*, cleats nailed on board to separate fingers.

Twelve hours after operation the hand was redressed. The molded plaster splint had of necessity been removed during the dressing, and after the fingers, which had assumed a semiflexed position during the dressing, had been straightened, the hand with the fingers extended and abducted was bound on the new wooden splint so that the dressing of the wound could be accomplished without removal of the splint. The hand, splint and dressings were then immersed in a hand bath of warm boric acid solution. The hand bath was used at intervals for three days, and the splint was reapplied every other day to prevent undue pressure from shrinkage of the bandage. After the fourth day the splint was removed daily and the patient was encouraged to flex and extend his fingers. His convalescence continued to a recovery of function of the hand without digital contracture.

DETAILS OF SPLINT

The splint which thus prevented digital contracture but permitted the use of the hand bath and easy access to the wound was made as follows:

1. A three-eighths inch pine board long enough to reach from the finger tips to the middle of the forearm and as wide as the hand plus the thumb was chosen.

2. The edges of the board were cut to conform roughly to the shape of the flat hand and forearm.

3. A window of sufficient size to expose the palm of the hand was cut in the board with a hand drill and a key hole saw.

4. Small cleats were nailed to the board in such positions that the fingers fitted into the interspaces between the cleats.

5. The splint was then sterilized in boiling water and was ready for use.

The splint was lightly padded with gauze and bound to the hand with a 2 inch roller bandage at the wrist and fingers to maintain extension.

With the splint thus applied, through and through rubber dam drainage was easily inserted, dressings were applied to the palm and dorsum, and the hand bath was used without removing the splint from the hand. Care was taken that the circulation to the fingers was not disturbed and that pressure on the fingers was not too great as the result of the bandage.

The advantages of this splint are as follows:

It is light, cheap, and easily sterilized.

It can be made to fit any patient and is adaptable to wounds of varying extent involving the wrist, hand or fingers.

It prevents contracture but permits the use of x-rays as well as of wet dressings and the hand bath.

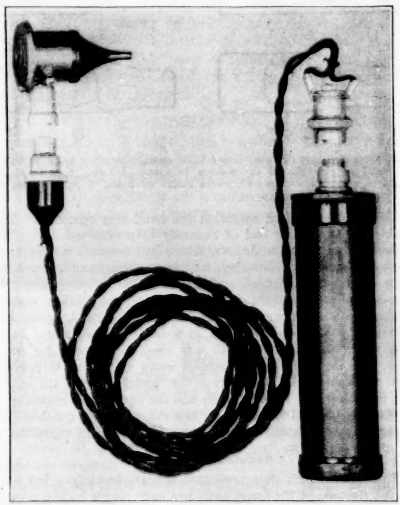
CORD CONNECTION FOR ELECTRICAL OTOSCOPES

M. H. COTTLE, M.D., CHICAGO

Electrical otoscopes are universally used for diagnosis, but their employment is limited if manipulations within the external auditory canal become necessary.

In cleaning out the canal, for example, the trained otologist holds an ear speculum and the pinna with one hand and has the other hand free for working. With the ordinary electric otoscope the battery handle is too heavy and cumbersome to allow a similar working arrangement. The examiner is forced to hold the pinna with one hand and the otoscope with the other hand.

The otoscope proper can by simple means, as illustrated, be separated from the battery handle, allowing its employment to



Cord connection in relation to the parts of the otoscope.

the fullest extent and the free use of one hand. The connection illustrated was made at my direction by the H. G. Fischer Company of Chicago and consists of a light weight double electric wire with suitable terminals for making contacts with the detached parts of the otoscope.

In the examination of young infants, this apparatus finds its greatest usefulness.

30 North Michigan Avenue.

A SLING TO PREVENT SAWING AND STRAIN ON THE NECK

H. W. HAIGHT, M.D., NEW BRUNSWICK, N. J.

The accompanying illustration shows an ordinary triangular sling of brown sateen, two cut out of one square yard, with the cut edges hemmed, and a pad of the same material, 21 inches long and 4 inches wide, with a padding strip of cotton batting, 1 inch thick, of the same size, and with two straps 1¼ inches wide sewed across the anterior surface of the pad, 1¼ inches from each end. All loose edges are turned in and stitched.

Tailored sateen sling devised to prevent strain on the neck.

When used as illustrated, the sling prevents sawing and strain on the neck. The tailoring makes a neat appearance and the brown sateen blends well with any costume. In my experience, patients have been much more willing to wear the neat, comfortable, sightly sling.

5 Elm Row.

FLAX HYPERSENSITIVENESS *

WILLIAM C. BLACK, M.D., DENVER

Many cases of specific hypersensitivity to various foods have been reported by numerous investigators. Duke [1] reports a series of cases in which many varieties of food acted as the causative agents. Richet [2] states that all the aliments may be etiologic factors in food allergy with milk, eggs and wheat the most common. Balyeat [3] mentions abdominal pain, vomiting and diarrhea as symptoms of food allergy, and gives two case records in which the causative agents were wheat and eggs, respectively. Rowe,[4] in a general discussion of allergy, cites a case of dermatitis due to contact with flaxseed.

Allergic reactions of this type vary greatly in severity, and the onset of the symptoms may be immediate, as in the cases reported here, or may be delayed for a time following the ingestion of food. In these cases the causative agent was a breakfast food consisting of mixed cereals, the specific factor in which was flax.

REPORT OF CASES

CASE 1.—W. N., a man, aged 23, a medical student, was given for breakfast a cereal called "Roman Meal" cooked as porridge, which he had never eaten before. As the first spoonful caused a tingling and burning sensation of his lips and tongue,

* From the Department of Clinical Pathology, University of Colorado School of Medicine.

1. Duke, W. W.: Food Allergy as a Cause of Abdominal Pain, Arch. Int. Med. **28**: 151 (Aug.) 1921.
2. Richet: Read before the Colorado State Medical Society, 1929; to be published.
3. Balyeat, R. M.: Hay Fever and Asthma, Philadelphia, F. A. Davis Company, 1928.
4. Rowe, A. H.: Allergy in the Etiology of Disease, J. Lab. & Clin. Med. **13**: 31-40 (Oct.) 1927.

he asked whether or not the food contained pepper. Another member of the family tasted it without noticing anything unusual. He then proceeded to eat the cereal, but as he ate found that his tongue and throat felt swollen. He drank a cup of coffee, after which the tingling and burning sensations diminished. Within five minutes after he had finished eating, and with almost no premonitory nausea, he vomited. Vomiting was violent and continued. After emptying the stomach, he drank two glasses of milk at intervals (as an antidote), which was vomited. During this period the previously mentioned sensations returned to the lips and tongue and extended to the pharynx, which felt "like it was on fire." It became very difficult for him to talk. At the same time extreme coryza and lacrimation developed, the burning sensation being present in the nose and eyes. The conjunctivae and lids became so edematous as nearly to close the eyes. The disturbances lasted, in all, about three hours, but the most acute stage lasted only thirty minutes. There were two bowel movements, the stools being copious and soft, but there was no diarrhea. Abdominal discomfort was present as a diffuse heavy sensation, so intense as to approach pain in character. After recovery from the acute stage of the reaction, no ill effects were noted, and on the afternoon of the same day he felt entirely well.

Several days later the patient brought in a sample of the food, the composition of which, as stated on the container, is wheat, rye and flax. Cutaneous tests by the scratch method were performed with the "Roman Meal," and also the purified proteins of wheat (whole), rye, flaxseed and flax. Tenth-normal sodium hydroxide was used as a diluent. In fifteen minutes reactions became apparent with the "Roman Meal," and with flaxseed, which were strongly positive in thirty minutes. At this time the two reactions were alike in size, with wheals approximately 3 cm. in diameter with well defined pseudopodia, and were surrounded by an area of erythema. Wheat, rye, flax and the control showed no reaction. The reaction from "Roman Meal" subsided within twelve hours but that from flaxseed was present as a diffuse swelling twenty-four hours later. After this reaction subsided the student was tested by the same method to linen and linseed oil (raw). These tests were negative.

There was no family history of hay-fever, asthma or urticaria. The mother had eczema. The past history of the patient was of interest in this respect: not more than five times in his life had he had asthmatic attacks, which had been short but very severe. They occurred in Missouri, where he lived until 1920. In Colorado he had had hay-fever the past two summers, but no asthma. He had had attacks of urticaria as a child. On account of the history of hay-fever he was tested for pollen sensitivity by the same method, and a strong positive reaction was obtained with green sage, pasture sage, Indian hair tonic, western water hemp, and Russian thistle.

The only previous contact the patient had had with flax as far as was known was at the age of 4, when flaxseed poultices were applied to a carbuncle on the leg over a period of about ten days.

CASE 2 (Reported through the courtesy of Dr. F. E. Becker).—B. G., a man, aged 48, a real estate agent, was seen by Dr. Becker in response to an emergency call. On arrival he found the patient in bed, very dyspneic and cyanotic. The illness had begun immediately after the patient finished eating a small dish of cooked "Roman Meal" for breakfast. It started with nausea and vomiting, and dull pain in the upper part of the abdomen. The throat felt swollen and "as though it were paralyzed." Phonation was very difficult. The voice became harsh. During this stage, which lasted from ten to fifteen minutes, respiration became increasingly difficult and was asthmatic in character. Cyanosis developed rapidly. At this time ephedrine sulphate was given, by mouth, with prompt relief. As the cyanosis disappeared, a generalized erythema became apparent. There were several urticarial wheals on the abdomen. There was no fever, coryza or conjunctival irritation. The disturbances lasted in all about two hours and cleared up without any lasting ill effects.

Because of the similarity between this and the first case, cutaneous tests, with the same technic, were made with wheat, rye, flax and flaxseed. The reactions to wheat, rye and flax were negative, but flaxseed caused a very strong reaction which appeared within five minutes, at which time the excess test solution was removed. The reaction, however, continued to spread, many long pseudopodia appearing. A wheal which measured 4 cm. in diameter was present at the end of fifteen minutes. The whole flexor surface of the forearm was erythematous.

The patient was born in Pennsylvania, and lived there for twenty-eight years. He had had hay-fever from boyhood. At the age of 18, he had had a severe infection of the foot, which was treated with flaxseed poultices and which lasted for about two months. Shortly after his recovery from this, he began to have sharp attacks of asthma, which would appear and leave suddenly. At the age of 28 he moved to Colorado where he had been relatively free from asthma but still suffered from hay-fever during August. About ten years before he had had an attack somewhat similar to the one described, but milder, which came on several hours after he had eaten buckwheat cakes. There was no family history of any allergic condition, but both of the patient's children were subject to attacks of hay-fever.

COMMENT

Flax fiber is used to make linen and other fabrics and flaxseed has a wide variety of uses. In these instances it is assumed that flaxseed, or flax meal, which is flaxseed from which the oil has been extracted, was incorporated in the cereal, although it is not stated on the package which part of the plant is used.

CONCLUSION

How commonly flaxseed or flax meal is incorporated in prepared cereals is not known. If this practice is new or growing, it may be expected that more cases of this type will be seen. Flaxseed apparently causes more violent local and general reactions in the hypersensitive than do most of the other allergic food substances. In these two cases there was a history of contact with flaxseed in the form of poultices from which an inference as to the etiology of the hypersensitiveness might be drawn.

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VINCENT'S (FUSOSPIRILLARY) INFECTION OF THE EAR *

L. H. BARENBERG, M.D., AND J. M. LEWIS, M.D., NEW YORK

During the past few years a great deal of attention has been devoted to the rôle of spirochetes and fusiform bacilli in the pathogenesis of disease. It has been shown that these organisms are capable of producing pathologic changes not only in the tonsils but in other organs of the body. For example the gums, bronchi, lungs, pleura, nose, brain and the genitalia may be the seat of fusospirillary infection. A knowledge of the various locations of the body which may be attacked by these organisms is of importance, as by the administration of arsenical preparations we are usually able to check the progress of fusospirillary conditions in a short time. It must be remembered that the lesions produced by these organisms may be very progressive and that if prompt treatment is not instituted extensive necrosis and at times even death may result.

The occurrence of spirochetes and fusiform bacilli as etiologic agents of aural diseases apparently is rare, as little mention is made of them in standard textbooks on otology. The literature contains few papers on the development of pathologic changes in the ear due to these organisms. In 1905 Held[1] reported a case of otitis media and mastoiditis in which smears from the aural discharge revealed innumerable spirochetes and fusiform bacilli. The tympanic drum was almost entirely gone. The external auditory canal also was involved, being covered by a dirty grayish exudate which bled on slight manipulation. Radical mastoidectomy was performed and a pseudomembrane found in the antrum and tympanic cavity, smears from which disclosed large numbers of spirochetes and fusiform bacilli. The child died a few days later, having had symptoms indicating meningitis; but unfortunately lumbar puncture was not per-

* From the Home for Hebrew Infants.

1. Held, R. J.: Vincent's Bacillus and Spirillum the Causal Agent of Chronic Suppurative Otitis Media Necessitating Radical Operation; Meningitis; Death, Post-Graduate **21**: 357, 1906.

formed, so that it could not be determined whether a fusospirillary meningitis was the cause of death. Three years later, Yates [2] reported a somewhat similar case. Operation disclosed the mastoid cells replaced by a spongy hemorrhagic mass, smears from which also showed innumerable fusospirilla. Recently Motta [3] reported two instances of chronic otitis media and external otitis which resulted from an infection of these organisms. The occurrence of fusospirillary meningitis as a complication of a chronic fetid otitis media has been described recently by Fanton.[4]

During the past year, we have had an opportunity of observing in children three instances of infection of the ear by spirochetes and fusiform bacilli, which seemed worth reporting on account both of their apparent rarity and of the rapid therapeutic results which were obtained with arsenical medication.

REPORT OF CASES

CASE 1.—J. S., a girl, aged 3 years, one of twins, was first seen at 3 weeks of age when the weight was 6 pounds (3 Kg.). During the first year, the child had two attacks of pneumonia, otitis media and glossitis. The weight was 16½ pounds (7.5 Kg.) at the end of the first year, and the general condition was poor. At 2½ years the patient suffered from Vincent's angina which was treated with an intramuscular injection of 0.2 Gm. of sulpharsphenamine and was cured within a week. During the past year the child had had chronic gingivitis. The results of the Wassermann, Pirquet and Schick tests were negative.

The present illness began, April 3, 1928, when a profuse purulent discharge was observed from the right ear. Saline irrigations were given every four hours without effect. April 26, the discharge became more profuse, serosanguineous and of fetid odor. The right auricle was greatly swollen, and it was difficult to introduce an ear speculum into the right canal on account of the marked edema of its walls. Profuse bleeding also resulted from this attempt. The right posterior auricular glands were enlarged but edema was not noted nor was tenderness elicited over the mastoid region. Except that the general condition of the child was poor, anemic and malnourished, the physical examination was negative. On account of the previous history of Vincent's angina and the bloody fetid character of the aural discharge, the possibility of a fusospirillary infection of the ear was suggested. Smears from the aural discharge and from the wall of the external canal, after the latter had been carefully cleaned, revealed large numbers of fusiform bacilli and spirochetes. Both tonsils were normal to external examination, but smears from them also showed many spirochetes and fusiform bacilli. Examination of the gums was negative for these organisms. Subsequent examinations gave the same results.

The aural condition became progressively worse and on May 8, about two weeks after the onset, it was decided to give the child sulpharsphenamine locally and systemically, From 5 to 10 drops of 10 per cent solution was instilled into the ear every four hours and 0.2 Gm. of sulpharsphenamine was injected intramuscularly. Within twenty-four hours, marked improvement was noted. A speculum could now be introduced into the ear with little difficulty and without the production of bleeding. A perforation in the posterior inferior quadrant of the tympanic drum was visible. Within forty-eight hours the discharge had entirely ceased and ever since the ear has been normal.

CASE 2.—E. B., aged 3½ years, was first seen at 7 months, when the weight was 18 pounds (8 Kg.). At 13 months of age, the child had an attack of measles and since that time had had chronic otitis media. At 2 years the patient had pertussis. The present weight was 33 pounds (15 Kg.).

July 7, 1928, the aural discharge became more profuse and fetid in character. The external canal was swollen and bled easily on introduction of the speculum. A grayish white membrane could be seen on the superior wall of the canal. On account of the fetid character of the discharge and the bleeding on slight manipulation of the external canal, a diagnosis of Vincent's infection of the ear was thought of. Smears from the discharge and the external canal revealed numerous spirochetes and many fusiform bacilli. Smears from the gums and the tonsils were negative for these organisms.

July 12, from 5 to 10 drops of a 10 per cent solution of sulpharsphenamine was instilled into the left ear and 0.2 Gm. was injected intramuscularly. Within forty-eight hours the fetid character of the discharge disappeared and no bleeding from the external canal was observed on introduction of the speculum. The middle ear, however, still shows a purulent discharge which has been in existence for more than two years. Smears of the discharge and from the external canal are now negative for spirochetes and fusiform bacilli.

CASE 3.—Y. R., a girl, aged 4 years, was first seen in August, 1926, when 1½ years of age, because of an attack of Vincent's angina which was treated with 0.2 Gm. of sulpharsphenamine intramuscularly, and which disappeared in a few days. In September, 1928, she developed an upper respiratory infection which was complicated by bilateral otitis media. The discharge from the right ear disappeared in two weeks, but that from the left ear persisted.

December 13, the child was reported as having a foul bloody discharge from the left ear. Examination revealed a slightly swollen auricle and an edematous external canal, which was covered with a dirty grayish membrane which bled profusely on slight manipulation. Smears showed numerous fusospirilla. Fusiform bacilli or spirochetes were not seen in smears taken from the tonsils and gums. Two days later, sulpharsphenamine therapy was instituted and within twenty-four hours the fetid odor and bloody discharge from the ear disappeared. The edema of the canal subsided and the smears became negative for fusospirilla. However, a purulent discharge from the ear still persisted.

COMMENT

In one of these three instances of infection of the external ear by spirochetes and fusiform bacilli (case 1), it may be noted that the discharge from the middle ear disappeared rapidly following the administration of sulpharsphenamine, which suggests that the tympanic cavity also was infected by these organisms.

Fusiform bacilli and spirochetes may be conveyed into the ear through the external auditory meatus by means of contaminated fingers, ear syringes or other foreign bodies. They can also find entrance through the eustachian tube as a result either of aspiration or of migration from the nasopharynx. It is often difficult to decide which has been the mode of entrance. In case 1, large numbers of spirochetes and fusiform bacilli were observed in smears taken from the tonsils, although they appeared normal. The child had an attack of Vincent's angina six months prior to the aural infection and, in spite of the fact that she was treated with an intramuscular injection of sulpharsphenamine, presumably continued to harbor these organisms within the tonsils. It seems likely that in this instance the fusospirilla entered the middle ear through the eustachian tube and gained entry into the external auditory canal through the perforated tympanic drum. In the other cases examinations of smears taken from the tonsils and gums did not reveal the presence of fusiform bacilli and spirochetes, so that it is probable that they were conveyed into the ear by way of the external auditory meatus.

It is interesting to note that in all three cases either an acute or a chronic otitis media anteceded the fusospirillary infection. These organisms are essentially saprophytic but acquire pathogenic activity when the integrity of the tissue with which they come in contact is altered as a result of bacterial, mechanical or toxic factors. The persistent aural discharge resulting from an inflammatory process of the middle ear probably eroded the epithelial lining of the external canal and thus paved the way for the entrance and multiplication of these organisms.

Since Vincent's infection of the gums and tonsils is rather common in children in institutions, it appears somewhat surprising that Vincent's infection of the ear is so infrequent. Perhaps this condition occurs more often than one is led to believe but remains undiagnosed. The sudden appearance of

2. Yates, D. G.: Mastoiditis Due to the Micro-Organisms of Vincent's Angina, J. A. M. A. **53**:116 (July 10) 1909.
3. Motta, R.: Su due casi di otite media purulenta cronica con associazione fuso-spirillare, Policlinico **35**:83 (Jan. 23) 1928.
4. Fanton, E.: Sopra un caso di meningite purulenta da spirochaeta in bambino, Clin. pediat. **9**:677 (Sept.) 1927.

a profuse, fetid and bloody aural discharge occurring especially during the course of an acute or chronic otitis media should arouse the suspicion of this disorder. Other conditions, such as diphtheria, tuberculosis and foreign bodies, should also be thought of. However, examinations of smears taken from the aural discharge as well as the employment of arsphenamine or similar preparations as a therapeutic test will readily determine whether one is dealing with a Vincent's infection of the ear.

The importance of early and judicious treatment should be emphasized. It is now generally accepted that arsenic is almost a specific for spirillar infection. The employment of this drug both locally and systemically brings about a most rapid result. We used a local application of a 10 per cent solution of sulpharsphenamine in the ear every four hours and 0.2 Gm. intramuscularly, and cure was observed within forty-eight hours. It is interesting to note in this connection that in the two cases reported by Motta cure was effected in a much longer time, in one instance in three months and in the other in about twenty days. He used only local applications of an arsphenamine solution and it is possible that, if systemic treatment had been employed as well, more rapid cure would have resulted. It should be remembered that necrotic tissue prevents the arsenic, when used locally, from coming into contact with the deeper tissue, which is most involved.

SUMMARY

Three instances of Vincent's infection of the ear in children were observed.

The appearance of a fetid, bloody aural discharge, especially during the course of acute or chronic otitis media, should arouse a suspicion of this condition.

The administration of sulpharsphenamine locally as well as systemically brought about a cure within forty-eight hours.

1749 Grand Concourse—495 West End Avenue.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. W. A. PUCKNER, Secretary.

CITRIN NOT ACCEPTABLE FOR N. N. R.

Citrin is marketed by the Table Rock Laboratories (Drs. Irving S. Barksdale and George R. Wilkinson, proprietors) in the form of capsules, each capsule claimed to contain "50 mgm. cucurbocitrin," the latter being, according to an advertisement, "a nontoxic glucosid-saponin processed from the seed of the watermelon (Cucurbita Citrullus)." In the information submitted to the Council, Citrin is stated to be "the crude extract" obtained from the watermelon seed. The available evidence does not indicate that the product is a pure glucoside, nor are adequate tests provided to insure the uniform composition of the finished product. The preparation is stated to be "for the treatment of hypotensive cardio-vascular disease" and is advertised as "The new therapy for vascular hypertension."

The published material on this preparation includes papers by Dr. Barksdale (*Am. J. M. Sc.*, January, 1926, p. 111) and Dr. Wilkinson (*J. South Carolina M. A.*, May, 1927, p. 366) and a report by Althausen and Kerr (*Am. J. M. Sc.*, October, 1929, p. 470). While earlier reports do not appear to be sufficiently critical, the extensive report of Althausen and Kerr offers considerable data on the effects of the preparation. From this report the blood pressure reducing action of the drug for the hours immediately following its use seems evident. Prolonged reduction with symptomatic relief is noted in a number of clinical observations. Reduction of blood pressure of 10 mm. of mercury or more was noted in twenty-nine of forty cases. One might criticize conclusions drawn from a drop of only 10 mm. of mercury, however, for variations of this amount and more occur spontaneously. If the data are examined more closely, it appears that a reduction of 15 mm. or more occurred in twenty-four of forty cases, and of 20 mm. or more in only thirteen of forty cases. There are so many factors causing fluctuations of pressure in cases of hypertension that considerable conservatism is required in evaluating these data. In six cases studied by the Council's referee, three showed definite reduction and three did not, following use of Citrin capsules.

The evidence of capillary dilatation in the frog, and of temporary lowering of blood pressure in dogs seems fairly good. The question at issue seems to be whether the observed lowering of blood pressure by drugs is of any great clinical value, and, when this does occur, to what extent it is due to the drug and to what extent to other factors. Altogether the clinical evidence does not establish the therapeutic usefulness of Citrin. In view of this the Council declared Citrin unacceptable for New and Nonofficial Remedies.

HALEY'S M-O MAGNESIA-OIL NOT ACCEPTABLE FOR N. N. R. AND MAGNESIA-MINERAL OIL (25) HALEY OMITTED FROM N. N. R.

Haley's M-O Magnesia-Oil (exploited with the emphasis on "Haley's M-O") is the name under which the Haley M-O Company, Inc., has marketed a mixture of magnesia magma (milk of magnesia) and liquid petrolatum. The firm requested acceptance of the product for New and Nonofficial Remedies, stating that it is composed of magma magnesiae 75 per cent by volume and liquid petrolatum 25 per cent by volume. The product was proposed for the relief of intestinal stasis, faulty elimination and constipation and sequelae arising from these sources; in pregnancy to allay gastric disturbances; and in the palliative treatment of hemorrhoids. The Council refused admission of the product to New and Nonofficial Remedies because the use of a mixture of liquid petrolatum and magnesia magma in fixed proportions under an uninforming name is detrimental to rational prescribing; because the name and its exploitation in the firm's advertising encouraged the use of the product without full knowledge of its composition and appeared likely to lead to ill considered use of the preparation by the public.

When informed of the Council's decision, the firm signified its willingness to conform to the requirements that the Council might make for admission of its product to New and Nonofficial Remedies. The firm was informed that the objection to the name of the product might be obviated by adoption of a name showing plainly the ingredients of the mixture and indicating the proportions; and that the advertising for the product must be revised. The firm adopted the name Magnesia-Mineral Oil (25) Haley, which the Council found acceptable. At that time the firm submitted advertising to which the Council found certain objections. The firm having met these objections and having promised that no new advertising would be issued without prior submission to the Council, the acceptance of Magnesia-Mineral Oil (25) Haley was announced (THE JOURNAL, April 20, 1929, p. 1349). Permission was granted the firm for the period of one year to refer to the product on labels and cartons as "formerly Haley's M-O Magnesia-Oil."

Subsequently, however, the Council was repeatedly obliged to object to extravagant and unwarranted claims which were made for the product. In the end, the firm wrote to the Council to the effect that its attempt to meet the requirements of the Council were proving financially unprofitable and that it had decided to go back to the old name, "Haley's M-O," with full realization that this would involve withdrawal of the Council's acceptance of the product. This means that physicians will again be asked to use this simple pharmaceutic mixture of magnesia magma and liquid petrolatum under an uninforming name. The Council directed the omission of Magnesia-Mineral Oil (25) Haley from New and Nonofficial Remedies and declared Haley's M-O Magnesia-Oil ("Haley's M-O") unacceptable for New and Nonofficial Remedies for the reasons given at the beginning of this report.

This is a clear demonstration of the wisdom of the Council's rule providing against the use of uninforming names for simple pharmaceutic mixtures. When a physician knows that he is prescribing milk of magnesia and liquid petrolatum, he will not expect the mixture to accomplish more than the recognized therapeutic effects; if, indeed, he considers it desirable to prescribe such a mixture at all. When he prescribes the mixture under an uninforming proprietary name, he will have in mind the effects with which those who prepare the manufacturer's advertising have endowed the preparation.

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SATURDAY, APRIL 5, 1930

STATE SCIENTIFIC AID TO CRIMINAL JUSTICE

A government, for the protection of the people against crime, establishes an intricate legal machinery consisting of courts, prosecutors and police, and gives them statutory rules of thumb by which they may work. For the investigation of supposedly violent deaths, the office of coroner or of medical examiner has been added. The office of coroner, as has been emphasized previously in these columns, functions poorly. The medical examiner system, for obvious reasons, does its work well. Although the necessary legal machinery and the laws are available, although the office of coroner or medical examiner is an agency that should utilize the facts of scientific medicine, our government falls short. The law defines the various gradations of crime with meticulous precision and lays down rules of legal procedure that must be followed with hair-splitting exactness but fails to avail itself of the aid which much more exact sciences might render.

The work of the coroner or of the medical examiner must of necessity be inadequate unless the office can avail itself of the laboratories of the medical sciences. The office deals with death, with the causes of death and with states of disease. Thus its work is not greatly different from that of the hospital. Yet the intelligent layman who would refuse to go to a hospital that did not maintain an adequate laboratory department permits the office of coroner or medical examiner to function without the aid of pathology, bacteriology, immunology, chemistry and toxicology, sciences that are of fundamental importance in establishing the cause and nature of any death.

The prosecutor, if he is to present a proper case, needs the results obtained by the application of these laboratory sciences. The court, if it is to be an instrumentality of justice, needs actual facts as much as do the prosecutor and the coroner or the medical examiner. The court, however, needs much more. It deals with living human beings, with those either justly or unjustly accused and with those who give evidence against the accused. The determination of criminal responsibility by the ability to distinguish between right and wrong may have been a satisfactory legal rule of thumb in earlier days. But right and wrong are not absolute concepts to be as sharply opposed to each other as are black and white. The advances of psychology have shown that what may be right for one person may be wrong for another. The doctrine of absolute right and wrong as a measure of criminal responsibility belongs to the days when every mental aberration was treated by the strait-jacket or by confinement in a madhouse that was worse than a prison. In meting out true justice, courts need the information that can be given them by those who are actually expert in psychiatry and abnormal psychology. Such information should come from an unbiased and nonpartisan source, and not from partisan or bipartisan experts. The right of the defense or of the prosecution to hire as many partisan experts as either side may choose or be able to pay for need not be abrogated, but one would like to see the court itself in a position to turn for advice to a source that the court might feel is unbiased and animated only by a desire to seek the truth.

The most important link in the chain of criminal justice is the policeman on the beat. The government clothes him with authority, places a pistol in his belt and a mace in his hand, and expects him to prevent crime. As long as his inefficiency is not due to graft and dishonesty, he is not to be blamed if he fails to prevent crime or if he is unsuccessful in the apprehension of a criminal. He usually knows no more of the aspects of delinquency and criminality than do others in the walk of life from which he is chosen. Having been chosen, he is not given the specialized training that he should have. The policeman should have the fundamental training that would prevent him from clumsily and unwittingly destroying evidence that may be necessary for the detection of crime or for the conviction of the criminal. He should know, through his superiors in the department, that microscopy, chemistry, immunology, metallurgy, crystallography or ballistics may yield highly important information and he should know where such information may be obtained. Not only should photography and other methods of human identification be available, but the policeman on a beat should know enough of their use to know when they should be used.

The scientific aids, most of them medical in character, so necessary to the work of coroners, medical examiners, prosecutors, courts and police should be, as they are abroad, an essential part of the machinery of criminal justice, a function of the government. In urban centers the work of criminal justice may be so great as to require an organization whose activities are confined to the city. In general, however, the ideal solution would appear to be an organization, comparable to foreign institutes of legal medicine, supported and controlled by the individual states, that could serve the

various agencies of criminal justice throughout the state. That the state is capable of conducting work in the laboratory sciences is evident from the work of public health laboratories, of water surveys and of state toxicologists. That it can function creditably in matters relating to psychiatry and abnormal psychology is evident from the work of the Institute for Juvenile Research in Illinois, of the system of state psychiatric examination in Massachusetts, and of the state criminologist in those states that have such an official. In most states an entirely new and expensive organization would probably not be necessary. Correlation and coordination, under proper direction, of agencies already existing in many states might form the foundation of a useful organization. The police function is so preeminently a property of city government that the training of police would probably have to be done by the police department of the local city government. However, since some states have found it advisable to organize state police, a school for the instruction of state police might readily offer instruction also to city police detailed to it in small numbers for training. Some time, perhaps, newspapers will tell less of crime waves and more of concerted intelligent action to overcome crime and to decrease its incidence.

ANOTHER PORTER NARCOTIC BILL

On March 26, Representative Porter introduced a third narcotic bill, H. R. 11143, to create in the Treasury Department a bureau of narcotics and to remove existing limitations on the importation of coca leaves that do not contain cocaine or ecgonine and of certain salts, derivatives and preparations of coca leaves. The Committee on Ways and Means has already reported it and it is now before the House of Representatives for action. The bill as reported ignores the appeals made by the American Medical Association that cooperation be established between the federal narcotic service and the proper authorities of the several states, in efforts to suppress the abuse of narcotic drugs. It ignores, too, an appeal made by the Association that approved laboratories be authorized to import the rarer alkaloids and derivatives of opium and coca leaves that are not manufactured in the United States, for purposes of research, under such limitations as the Federal Narcotics Control Board may impose. It takes care, however, of certain commercial interests that use, or profess to use, decocainized coca leaves in their businesses.

The federal narcotic service has repeatedly alleged that narcotic addiction is prevalent among physicians. It has claimed, too, that there is no method by which physicians addicted to the use of narcotic drugs can be prevented by law from obtaining them. The falsity of the latter statement has been pointed out to officers of the federal narcotic service, since the medical licensing boards of most of the states are empowered to revoke the licenses of physicians who are addicted to the use of narcotic drugs. It is necessary only for the federal narcotic service to lay before the boards having that authority adequate evidence of narcotic addiction, in order to procure the suspension or revocation of the licenses of addicts. A rule promulgated by the Secretary of the Treasury, forbidding disclosure generally of the affairs of the Treasury Department, a rule that can be amended by the secretary at any time, is the only excuse that has ever been offered for the failure of the federal narcotic service to cooperate with the state medical boards. Until some adequate explanation of the failure of the federal narcotic service to procure an amendment of this rule by the secretary, so as to permit cooperation with the states, the only inference that can be drawn is that the service realizes that such evidence as it has will not bear scrutiny by disinterested fair-minded persons.

It was proposed to the Committee on Ways and Means and to Representative Porter, on behalf of the American Medical Association, that pending legislation looking toward the establishment of a Bureau of Narcotics require the proposed Commissioner of Narcotics to cooperate with the authorities of the several states in formulating adequate state laws and regulations to control narcotic drugs and in the prosecution of cases before state licensing boards and courts. The omission from the present bill of any authorization or requirement for such cooperation suggests that the plan proposed by another pending narcotic bill, H. R. 9054, of establishing federal control over the practice of medicine, dentistry, veterinary medicine and pharmacy in the several states, so far as relates to the professional use of narcotic drugs, has not been abandoned. Such a proposal should be resented as a proposed encroachment by the federal government on the rights of the states. Physicians, dentists, veterinarians and pharmacists, however, have more than an abstract patriotic relation to such a proposal. It means that their rights to practice their professions, so far as they require the use of narcotic drugs, will be dominated and controlled by federal field agents and by a federal bureau chief in Washington. If any provision is made whereby a physician may appeal to the courts to obtain his rights, it will be to the federal courts, not to the courts of his own state.

The fact that none of the bills recently introduced provide for the removal of the obstacles now in the way of research into the properties and uses of the rarer salts, derivatives and preparations of opium and coca leaves is of interest not only to the medical profession but also to the general public. Such obstacles tend to hinder the development of methods for the relief of pain and the treatment of disease. As the law now stands, no salt, derivative or preparation of opium or coca leaves can be imported into the United States. When there is a sufficient commercial demand for any of these to justify its manufacture in the United States,

the law works no harm, for it allows the importation of as much crude opium and coca leaves as are necessary for that purpose. On the other hand, when there is no commercial demand for such a salt, derivative or preparation sufficient to justify its manufacture in the United States, research workers in the United States are unable to study it with a view to determining its properties and uses. Representative Porter was requested by letter, May 3, 1929, to incorporate in any amendment of the Narcotic Drugs Import and Export Act that he might prepare a provision whereby laboratories desiring to investigate the property of these rarer salts, derivatives and preparations, and to obtain papaverine and similar drugs, might import them under proper regulations. The omission from the two bills previously introduced by Representative Porter of any provision to meet the situation was attributed to the fact that they did not seek to change the scope of the Narcotic Drugs Import and Export Act. The present bill, however, proposes to limit the scope of that act in other respects, and the amendment that was proposed to provide for scientific research therefore was and is germane. The present bill proposes to remove restrictions on the importation of coca leaves and to authorize the importation, without limit, of coca leaves that do not contain cocaine or ecgonine, or any salt, derivative or preparation from which cocaine may be made, and the importation of any salt, derivative or preparation of coca leaves which does not contain cocaine or ecgonine or any ingredient from which cocaine or ecgonine may be made. Why such a concession should be made and the legitimate needs of the medical profession ignored is not explainable by anything in the bill.

The present bill is objectionable in that it proposes to substitute a single federal officer, ranking as a commissioner, in place of the federal Narcotics Control Board, made up of three cabinet officers. Even, however, if a misguided commissioner of narcotics should arbitrarily limit the importation of opium and coca leaves so much as to create a scarcity of their medicinal derivatives, it is hardly possible that manufacturing pharmacists will ever be unable to furnish a reasonable supply of such drugs at prices within the reach of average patients. The problem of such limitation is primarily a problem for the people, not for the medical profession, for it is the people who will suffer in event of a scarcity. On the other hand, federal cooperation with the states in the enforcement of federal and state laws, instead of the assumption by the federal government of autocratic control of the professional use of narcotic drugs within the states, is of primary interest to the medical profession. So also to a large extent is the matter of the importation of the rarer forms of narcotic drugs for purposes of research. Unless the pending bill is amended so as to insure federal cooperation with the states and to permit the importation of the rarer forms of narcotic drugs for purposes of research, under proper restrictions, the bill must be considered objectionable and should be opposed. Protests should be sent promptly to every member of the House of Representatives by physicians, individually and through their organizations.

The bill here discussed, H. R. 11143, pending before the Committee on Ways and Means, should not be confused with another of the narcotic bills, H. R. 9054, introduced by Representative Porter, January 23, and pending before the Committee on Foreign Affairs. The latter bill proposes to vest in the Commissioner of Prohibition autocratic powers over the professional use of narcotic drugs by physicians, dentists, veterinarians and pharmacists, and to that extent it proposes to limit the powers of the states with respect to the regulation of the practice of medicine and the other professions named. If the bill here under consideration should be enacted, the autocratic powers that it is proposed in the other bill to vest in the Commissioner of Prohibition would be transferred to the Commissioner of Narcotics. Representative Porter, however, has agreed not to take up the consideration of the bill enlarging the powers of the Commissioner of Prohibition until after it has been considered by a subcommittee of the Committee on Foreign Affairs, in conference with committees appointed by the American Medical Association and by pharmacists. The Executive Committee of the Board of Trustees of the American Medical Association, March 28, appointed a committee to represent the American Medical Association in the matter.[1]

Current Comment

GRAPE JUICE AND ACIDITY OF THE URINE

The body is essentially an acid-producing organism. One of the most important of the energy-yielding biochemical reactions is the oxidation of the carbon contained in food materials to carbonic acid. The metabolism of the sulphur and phosphorus in proteins likewise yields end-products that are acid. In spite of this recognized tendency to the production of acids, the slightly alkaline reaction of the blood and body fluids is maintained with great efficiency. Not only do the buffer systems in blood and tissue fluids maintain an almost constant reaction, but, in addition, the lungs and kidneys are active in removing acids. Obviously, then, there is a constant demand for base in the body; the food constitutes the ultimate source of the required alkali. Vegetables and fruits yield an alkaline ash in the laboratory, and a similar behavior has been demonstrated in many instances in the body. Indeed, it has been shown that oranges, apples, pineapples and tomatoes, fruits with juice of more or less pronounced

1. The committee consists of Dr. Robert L. Anderson, Pittsburgh; Dr. S. Dana Hubbard, New York; Dr. J. R. Neal, Springfield, Ill.; Dr. Torald Sollmann, Cleveland; Dr. J. H. J. Upham, Columbus, Ohio, and the following ex officio members: Dr. Edward B. Heckel, chairman, Board of Trustees of the American Medical Association, Pittsburgh; Dr. William Gerry Morgan, President-Elect, American Medical Association, Washington, D. C., and Dr. William C. Woodward, legislative counsel, American Medical Association, Chicago.

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acidity, yield alkali in the course of metabolism sufficient to change the reaction of the urine. That this type of action is not characteristic of all fruit juices, however, has recently been shown again by Pickens and Hetler,[1] who examined, among other things, the acidity of the urine in human subjects who had drunk large quantities of grape juice. When, under carefully controlled experimental conditions, as much as a quart of grape juice daily was ingested, neither the titratable acidity nor the hydrogen ion concentration of the urine was significantly altered. This is not the only example of the failure to decrease the acidity of the urine by a fruit with an alkaline ash. Blatherwick[2] has shown that the ingestion of prunes, plums and cranberries results in an actual increase of acidity of the urine, owing, probably, to the content of benzoic or other similar acids in these particular fruits. One puzzling aspect of the behavior of the unfermented, sweetened grape juice used in these studies is the fact that raisins are known to decrease the acidity of the urine. In view of the growing tendency to adopt dietotherapeutic alkalization by means of fruits and fruit juices, it is well to point out that not all fruits are effective in this regard.

THE KIDNEY-SHAPED FEMALE PELVIS

Uncivilized and primitive peoples usually give birth to their children easily because the pelvis is round. With civilization came the kidney-shaped pelvis, delivery by forceps, and cesarean section. In some countries of the orient, the primitive and the civilized live side by side; thus in China, according to Kathleen Vaughan, cesarean section is a frequent operation but is confined to the superior class of Chinese, who live much indoors and bind their feet so that exercise is impossible. Outside Bombay, the women of the weaver caste engaged in the numerous outdoor occupations of village life have large families with little trouble in parturition. The same women brought into the city of Bombay and living a sedentary life in the dark streets have such great difficulty in childbirth that the caste is maintained only by the constant influx of country people. Dr. Vaughan[3] attributes the kidney-shaped pelvis not only to the softening of the bone from lack of sunlight and of vitamin D but also to the lack of exercise of the sacro-iliac joint. It has already been shown that ankylosis of these joints results in atrophy of the sacrum and of both ilia unless the ankylosis is unilateral, in which case the pelvis fails to develop on the corresponding side. In examining pelves at the College of Surgeons, Dr. Vaughan observed that the auricular surface of the sacrum in apposition with the first three sacral vertebrae is much more extensive in native races, so that there is a larger surface covered with cartilage to influence bone growth. The joint, comprised by a projection from the ilium into a depression of the second sacral vertebra, on which the sacrum moves backward and forward, is always well developed in circular pelves and is accompanied by a large auricular surface. She suggests that, if the mobility of this joint were maintained by Westerners as it is by the uncivilized peoples of the East and in Africa, the pelvic deformities leading to difficult labor might be eliminated.

1. Pickens, L. M., and Hetler, R. A.: J. Home Economics **22**: 44 (Jan.) 1930.
2. Blatherwick, N. R.: The Specific Rôle of Foods in Relation to the Composition of the Urine, Arch. Int. Med. **14**: 409 (Sept.) 1914.
3. Vaughan, Kathleen: Maternal Mortality and Its Relation to the Shape of the Female Pelvis, Proc. Roy. Soc. Med., Sec. Obst. & Gynec. **23**: 191 (Dec.) 1929.

FACTORS IN PUERPERAL SEPSIS

In the attempt to make some inroad on the obstinately high morbidity and mortality from puerperal sepsis, emphasis has been laid on preserving the asepsis of the genital tract during labor. Many obstetricians have abandoned the use of vaginal examinations even with the gloved finger. La Vake,[1] who holds that in 95 per cent of cases that will terminate spontaneously vaginal examination is unnecessary, has used rectal examination as a routine in these cases since 1913. His experience accords with that of many others who claim that this procedure reduces morbidity during the puerperium. Among those who have not found this advantage in the substitution of the rectal method is Reis,[2] whose study comprises 609 patients examined by vagina, 271 by rectum, and 106 delivered without examination. Pelvic infections were rather more frequent among those rectally examined than among those examined by vagina. There was, however, a distinctly lower morbidity among the women who received no examination at all. Two possible interpretations suggest themselves to account for this result. Perhaps the 106 in whom labor was left entirely to nature were selected cases in which labor was particularly easy. The rectal as well as the vaginal examination, however, by manipulation in the neighborhood of the cervix, is liable to convey bacteria already present in the vagina to the cervical canal. The great care that is taken at the time of parturition in preserving the aseptic integrity of the reproductive passage is in rather marked contrast to the indifference usually displayed as to the safeguarding of this route in the days immediately preceding labor. The careful obstetrician can hardly afford to overlook the possibility of such contamination. Even supposing that the reproductive canal is aseptic at the onset of labor and is not infected during the stages of labor, the puerperium is still not secure. Armstrong[3] has described three epidemics of puerperal sepsis at St. Bartholomew's Hospital in which he considers evidence as convincing that they resulted from "air-borne" infection. Armstrong suggests the exclusion from maternity wards of all possible carriers of streptococci as well as all those who may be subject to streptococcal infection of any kind, and, as an additional precaution, the use of gauze masks. Trauma occurring during parturition remains a factor of high importance. Among 2,000 deliveries in the maternity district of the hospital, puerperal morbidity was found to be 10 per cent higher after instrumental than after spontaneous delivery.

1. La Vake, R. R.: The Rectal Examination and the Concealed Second Stage of Labor, Am. J. Surg. **7**: 683 (Nov.) 1929.
2. Reis, R. A.: The Status of Rectal Examination in Labor, Am. J. Obst. & Gynec. **8**: 475 (Oct.) 1924.
3. Armstrong, Richard: Air Borne Infection in Puerperal Sepsis, St. Bartholomew's Hosp. Rep. **62**: 169, 1929.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Sixth Annual Meeting, held in Chicago, Feb. 17, 18 and 19, 1930

(Continued from page 1000)

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 17—AFTERNOON

IMPORTANCE OF PATHOLOGY IN MEDICINE

Opportunities for the Study of Morbid Anatomy in the United States and Canada

DR. LOUIS B. WILSON, Rochester, Minn: The Council on Medical Education, in its attempt to encourage hospitals to increase the number and improve the quality of their autopsies, is constantly meeting with the complaint from hospital authorities that there are not nearly enough competent pathologists available to do the required work. In conversations with heads of departments of pathology in medical schools, one gets the impression that there are relatively few young medical graduates in training as pathologists in the United States, though some think that there is an increasing percentage of graduate physicians who are spending from three months to a year in pathology as a preparation for the practice of clinical specialties.

In order to determine if possible the facts concerning these two groups, a questionnaire was sent to the heads of pathologic departments in medical schools and to the chief pathologists in a few large hospitals not connected with medical schools. Replies were received from fifty-five pathologists. The total number of autopsies performed by them during 1929 was 20,952. Of these, 17,608 were done by thirty-five men, who each did 200 or more.

Thirty-five European pathologists performed about twice as many autopsies in the same period as the highest thirty-five in the American group reporting to the questionnaire. With at least thirty-five pathologic departments in America each performing more than 200 autopsies a year, if the average were 500 each there would seem to be enough material for the training of a considerable number of physicians in autopsy practice. Almost all of the pathologists reported that the autopsies performed by them were open to graduate students to act as assistants. It is difficult to understand why any pathologist, except perhaps in coroner's cases, should exclude from among his assistants all those who were not fully trained in autopsy technic.

A second factor in the problem is the extent to which the opportunities for assisting at the autopsy are taken up in the teaching of undergraduates and of interns on general hospital services. It is difficult to interpret what the reporting pathologists meant in every instance, but so far as can be determined the status at present is as follows: The total number of graduate students, including interns and residents, reported by the fifty-five pathologists was 171. Of the fifty-five schools reporting, fourteen apparently had no graduate students of any sort. In the other services there were eighty-three interns, ten resident pathologists, ten members of the junior pathologic staff and sixty-eight graduate students of all other varieties. In addition to the 171 graduate students in pathology of all varieties now listed in the fifty-five hospitals replying to the questionnaire, there would appear to be opportunity, according to the statements of the pathologists concerned, for the further training of seventy-six more graduate physicians in pathology than are now enrolled.

A third factor is the inadequate or "lopsided" organization of many pathologic departments. With limited budgets and laboratory space, a few promising young graduates are engaged to teach and conduct research. Once such a graduate is a member of the teaching staff, whether he is designated assistant, instructor, or what-not, his duties are apt to be much more largely teaching than learning. And this is at a time when he should be devoting himself to the study of pathology in all of its bearings, much more than to teaching undergraduates. Just how much time may be necessary for a graduate physician, who has had the start of at least one year of general hospital internship and who is working to best advantage in an adequate pathologic service supervised by a competent and inspiring pathologist, to become capable of heading or at least taking second place in the pathologic laboratories of a medical school or of a large hospital is impossible to say. Much depends on individual aptitude. My experience, however, would seem to indicate that three years is the average period. Training and experience in teaching on the part of the graduate student of pathology should be considered an adjunct of his training rather than the principal part of it.

A fourth factor is the lack of proper publicity concerning the opportunities available in the United States. Many young physicians have the mistaken notion that Europe is the only place where opportunities for assisting in autopsies may be obtained. If the autopsy services now in being in America were organized to the best advantage, it would be found that there is ample service not only for the adequate teaching of undergraduates and the training of general interns and residents in the specialties but also for the training of pathologists. It is suggested that pathologists heading university departments who have adequate unutilized facilities for the training of even one more man for a period of two or more years should state this fact through the ordinary channels of publicity of the university. It would appear desirable to include in this publicity a bulletin board announcement. Such an announcement should state clearly the facilities available, the entrance requirements, the minimum period of residence and the financial arrangements.

Educational Influence of Pathology on House Officers in a Teaching Hospital

DR. HOWARD T. KARSNER, Cleveland: The hospital can well be thought of as a graduate school and the house officers "so dealt with that the mere acquisition of knowledge shall not crush originality of intellectual endeavor." Indeed all encouragement should be given the exercise of a sane imagination. Each house officer in a hospital has a mental equipment which is inborn and which has been influenced by general and technical education. The product of these is the material which will be subjected to further education by the hospital staff. The most satisfactory result is to be obtained by a sympathetic understanding of the inherent qualities of these minds and of the directional effects of the educational forces to which they have been subjected. The student in his medical school is in a sheltered microcosm, with his time plotted as in a railroad schedule and his studies arranged and guided for him by his instructors. Even in the most liberal curriculums he has but little freedom of choice. One of the functions of his school is to save him time and effort in the selection and assimilation of those facts and well established hypotheses prepared by his predecessors. His predilections and interests may emphasize certain fields of study to his own well being, but he must cover his field with philosophic breadth and so far as his work in pathology is concerned must harmonize it with the systematized whole.

His cosmos in the hospital is broadened as his more intimate contacts with the staff, with his fellows and with the patients necessitate. His intellectual efforts acquire a greater freedom in accord with his capabilities. Pathology occupies a larger share of his thought than is ordinarily true when he goes into practice. What pathology brings to him in the hospital depends on the professional pathologist, the group of interested clinicians and himself.

The professional pathologist in the hospital therefore has a heavy responsibility for the welfare of the house officers, which only a genuine enthusiasm for the place of pathology in medicine will enable him to meet. His end can be gained by humility and enthusiasm, humility in the face of an ever broadening field of problems and enthusiasm in the effort to solve them. The hospital house officer will profit from a study of pathology in the institution in accord with his own interest, that of his chiefs, the material which both provide for study and the intelligence and enthusiasm of the pathologists. Occa-

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sional house officers serve in order to prepare for a career in pathology. Others spend a period of their clinical internship in the laboratory. Others visit the laboratory freely. Still others enter the laboratory to secure enlightenment on materials from their patients. Occasionally interns confer with the pathologists to discuss the diagnosis and treatment of their patients, or to consult in regard to scientific problems. All these circumstances offer the pathologists an opportunity to make his imprint on the "budding talent." He should know the house staff and what the objectives of each member are. In spite of insistence on the conception of the hospital period as educational in the sense of the graduate school, its vocational aspects cannot be overlooked.

The house officer in pathology, looking forward to a career in that subject, is all too ready to concentrate on methods and materials. As a balance against this tendency he should be encouraged to find a place in nature for the phenomena he observes and also to consider their bearing on disease in the living. The house officer working in pathology as a preparation for or as a part of his clinical internship has no need of encouragement to look for its clinical application. In his case the urge to make all the factors "practical" may lead him to lose sight of his primary objective, namely, the study of the nature of disease. The value to be obtained from periods of different length spent in the laboratory cannot be calculated mathematically, but the worth progresses more nearly in geometrical than in arithmetical proportion. If a man can give two years to such work, his second year is more than twice as valuable as his first year. If he gives only one year, his second half-year has more than twice the value of his first half-year. Four months is the minimum amount of time that can be spent usefully in the laboratory. After a year's service the intern may subsequently make genuine progress in the pathology of a special field as an adjunct to his clinical work, but two years give him a more satisfactory background. From four to six months is in most instances inadequate for this purpose, but time so spent still may have distinct educational worth.

The house officers who visit the laboratory for examination of materials from their patients and explanation of reports, or to consult in regard to other matters, are not subjected to a continuous and concentrated influence by the pathologist. The manner of reception by the pathologist and his interest in the material or the problem, quite as much as the inherent interest of the house officer, determine the frequency of these visits and accordingly such benefits as the pathologist may confer. The educational importance, when properly nurtured, can be far-reaching, for even in a few minutes the stimulus to further study and to appreciation of general implications can be suggested.

If imbued with the spirit of scientific curiosity, the pathologist may, in addition to imparting the results of immediate observation, instil a like curiosity in the house officers of all classes. Case reports of especial interest can be placed in the literature, for their own sake and for the collection of data when a sufficient number justifies organized and statistical examination. Material on a given condition may accumulate in the laboratory in adequate amounts for investigative compilation. The place of the intern in these investigations depends on his desire to enlarge the sum of human knowledge, his ability to make exact observations and occasionally on his constructive imagination. His qualifications to take part in research, other than initiative and industry, rest on his capacity to make and record the observations required. His routine as an intern generally precludes the learning of intricate technical methods, nor can his research depend on great experience. In encouraging him to investigation his senior must adapt the problem to the house officer's limitations and not impose difficulties of technic that will serve either as a diversion from the objective of a general training or as a sourse of discouragement. If time and training permit only the preparation of case reports, energy is not wasted, for these have a general value and accustom the house officer to the library and its stores, thus preparing him to consult original sources when he is no longer sheltered in the fold of the hospital.

The Pathologist's Opportunities in Medical Research

DR. C. C. BASS, New Orleans: The profound influence of pathology on the progress of medicine and the development of our knowledge of disease since the earliest days indicates the abundance of opportunities in medical research which the pathologist may enjoy today. Many of us, no doubt, fail to realize the extent to which the accomplishments of the great men in medicine have rested, either directly or indirectly, on pathology. Medical bacteriology is that branch of pathology which deals with infective diseases and their causation. While general bacteriology has developed as a separate branch of science, medical bacteriology has developed largely as a part of the broad subject of pathology, or in close relation and association with it. With the discovery of bacteria as the chief specific cause of most diseases and as a result of researches into the influences that favor, limit or resist their invasion, immunology and serology have developed, also within the general field of pathology. Through these branches which have been so inviting for research, exact means of diagnosis and specific methods of treatment have been discovered whose value and influence on medicine and surgery it is almost impossible to estimate.

The greatly increased interest in pathology during the past fifty or sixty years and the exact methods of studying diseases in the light of bacteriology have led to the discovery of protozoa and other parasites as the cause of many diseases and to the development of another branch of science, parasitology. As in the case of bacteriology, general parasitology has developed as a separate branch of science, but medical parasitology has developed in close relation with pathology, again greatly increasing the pathologist's opportunities for research. And pathologists have contributed largely to the discoveries and advances relative to the nature and cause of these important diseases. Has the field been exhausted by the past great and productive activity, or are there still opportunities left? My answer is that there has never been a time when the pathologist's opportunities for research were greater, or gave greater promise of success, than today. The young man who has research ability can find unlimited opportunities in the field of pathology.

The Pathologist in a Private Clinical Laboratory

DR. KENNETH M. LYNCH, Charleston, S. C.: Because hospital and medical school pathologists have been mainly concerned with the study and teaching of general pathology, morbid anatomy, autopsy technic and tissue diagnosis, there came to be a distinction between pathologists and clinical pathologists, the latter having little to do with this work, except in the case of a hospital connection, but rather being mainly concerned with medical bacteriology, parasitology, serology and chemistry. Even in some hospitals and private laboratories the services of pathologist and clinical pathologist are separate, and, although some hospital pathologists may have charge of the clinical laboratory work and while some privately practicing pathologists may have hospital connections through which they may do postmortems and tissue diagnosis, the clinical pathologist doing only private laboratory work usually has little opportunity in this field and commonly does not undertake it or claim proficiency in it. At least he should not unless his training qualifies him for it and unless his practice of it is sufficient to enable him to retain his proficiency.

In response to the demand on the part of practitioners for laboratory service for patients not in hospitals and in hospitals not having such organized service, many clinical pathologists have set up private laboratories and entered into the practice of the specialty. Some of these have hospital laboratory connections, some have not. In such private practice of laboratory medicine, and in the practice of pathology as a whole, the specialist is naturally completely subservient to the profession. His clientele is composed not of patients but of the physicians of patients. Other specialists doing even referred work in large part usually deal directly with the patient and are responsible more or less directly to him and so retain control of their own work. If the laboratory technician does not do those parts of the work which require a medical training, if he simply examines substances delivered to him and reports on

the results of the analyses, his qualifications are thus far nonmedical. If, in addition, clinicians may assume responsibility for the medical connections and applications of the work without themselves being proficient in it, clinical pathology is nonessential as a medical specialty. The field of laboratory medicine has become a large one, involving examinations of a highly complex order and practices of a high character. It will become still larger and the practices and procedures more complex and difficult. Some clinicians are and will be thoroughly conversant with the phases of laboratory examinations although they might not be able to carry out the examinations themselves. Such physicians might safely entrust the actual examinations to trained technicians, provided they may be assured of the technicians' proficiency and trustworthiness. The great majority of practicing physicians are entirely incapable of utilizing the medical laboratory on their own responsibility.

The clinical pathologist is in constant touch with the progress of medicine in general and of laboratory medicine in particular. He qualifies as a medical consultant. But he should not aspire to encroach on the clinical field as some would apparently like to do. Even clinical pathologists who enter other fields of practice soon lose their proficiency in their former work.

Such an understanding of this specialist and of the value of his work to medicine brings into reproach all practices wherein lay technicians are elevated to this responsibility or whereby medical laboratory work is lowered to the plane of uncontrolled laboratory technic. It outlaws the commercial laboratory in medicine. Such an understanding classifies clinical pathology as an essential medical service which can exist only through reasonable and proper economic support. Obviously the medical specialist concerned cannot work on the same economical basis as the lay technician. There has been much said of the additional cost of medical care on account of the laboratory expense. Laboratory medicine is probably the medical service of lowest actual and proportionate cost to the sick. Apparently its cost cannot be lowered and the specialty retained. Any suggestion of cutting the cost of medical care at this point should be critically analyzed, particularly for "smoke screens." Necessary examinations by a proper expert properly paid may not be as expensive as unnecessary or improper examinations by cheaper means. Many people are now paying for laboratory work which they do not get or do not need or which it would be better that they should not have, but it would indeed be an event to find an instance of an exorbitant charge for an examination done by worthy technicians.

As long as there are sick people there will be a need of laboratory medicine. That need will be properly and fully cared for only by the medical specialist. When patients are well hospitalized there will usually be no field for a private clinical laboratory. When their number is sufficient within a convenient radius there should be an opportunity for a clinical pathologist. The responsibility of the profession at large in the matter is also an adherence to the principles involved, and it is and should continue to be the business of organized medicine to hold these clearly before the profession.

DISCUSSION ON PAPERS OF DRS. WILSON, KARSNER, BASS AND LYNCH

DR. ERWIN D. FUNK, Reading, Pa.: If we turn back the pages of medical history fifty years, we find that the physician relied largely on his own good judgment as to what he could observe of the physical condition of his patient. Today much more is expected of that judgment because of the infinitely broader foundation on which it rests. That foundation consists not only of pathology but also of anatomy, physiology and biochemistry. We may call these the great triad on which the physician can build his superstructure. The small hospital, not connected with a college and far from a large medical center, can become an excellent source for postgraduate study for medical house officers and staff physicians. The pathologic department is the hub about which all teaching may revolve. The guiding spirit in this movement of pathologic research and clinical teaching is undoubtedly the clinical pathologist who not only is well versed in morbid anatomy but combines that rare ability to evaluate the clinical and functional importance of his observations. He must encourage his staff and house officers to follow as many cases as possible to the necropsy table. It is the duty of the pathologist to let no clinical diagnosis in the event of death go unchallenged until he has exhausted every honorable means of securing a necropsy. In our hospital the clinical pathologist talks to the physicians, nurses and interns on how to "sell" necropsies. If such a procedure is productive and successful, there is always sufficient pathologic material present for a study of the morbid anatomy and its relation to clinical medicine. Our greatest difficulty has been to have the physician always present at the time of necropsy. This has been largely overcome by having private clinicopathologic conferences with the physician at his convenience. One way in which hospitals can raise their standard of practice is through pathology. It also encourages the physician to read more, and thereby he becomes a better teacher for the house officers. The more assiduously the physician investigates his failures, the more he will develop that great essential necessary for the practice of medicine called imagination. Of what value is observation or accumulation of facts if one has not the imagination to appraise them?

DR. H. E. ROBERTSON, Rochester, Minn.: Twenty-five years ago, when I went into the specialty of pathologic anatomy, I had to face the prejudice that existed in the minds of most medical men against any one entering one of the basic sciences. Today pathology and pathologic anatomy occupy a tremendously important place in medical practice and medical teaching. Why? Because the whole medical world has its eyes directed toward the pathologist who is making postmortem examination and who will tell them the truth about the case. What constitutes proper training for such an individual? How long does it take to make a pathologic anatomist? My answer is that he is never "made." All we can do is to make him a going concern or give him the chance to become a going concern, so that he travels somewhat well on his own steam, but even then, if he has not the spirit born in him, he will soon slow down, and he does not become a real specialist in his field any more than any other specialist does. It takes about two or three years to make a pathologic anatomist—an individual who has a little steam of his own to carry himself along. The field of pathologic anatomy was never more of an active field, never richer in possibilities, than it is today. What we need to do as pathologists, as heads of hospitals, as heads of medical schools, is to see to it that the mantles of those who are in charge of the field shall fall on the individuals who can carry on the work. In practically every hospital in this country there are enough facilities, and in many the head pathologist possesses enough initiative and inspiration to transmit interest to some other individual and make him a going concern. Dr. Wilson's survey shows clearly that our facilities are wonderful in this country.

DR. L. H. PRINCE, Hines, Ill.: The United States Veterans' Bureau found it impossible to get a sufficient number of pathologists to supply fifty or so hospitals. It therefore became incumbent on the bureau to train some of the members of the medical staff. At the present time I have a class consisting of six members. It must be remembered that in our institutions there are certain administrative difficulties over which we have no control and which are insurmountable. We must interpret every one of our activities in terms of dollars and cents. The maintenance cost of each hospital must be reduced to the day-of-relief standard. The training of individuals in pathology therefore became an acute problem, and in some of our institutions in outlying places, it was utterly impossible to maintain a pathologist and a roentgenologist at the same station, because there was not enough work for either one. It was necessary to combine the two activities. Therefore, in addition to being a competent pathologist, a man so stationed must also be an expert in roentgenology. The problem is not an easy one to handle. We avoid most carefully offending the clinician. I do not wish to convey the idea that the bureau is not generous in its supplies and material. We can get practically everything we request and within a reasonable length of time. Everything that is necessary to conduct the work in the interest of the beneficiaries of the Veterans' Bureau is handed out without any objection. There seems to

be no question of cost there, but because of the administrative difficulties of the organization, it is utterly impossible to increase one's force sufficiently to carry on the work.

DR. WALTER FREEMAN, Washington, D. C.: Dr. Prince has painted a rather gloomy picture of the outlook in the Veterans' Bureau, and I might say that it applies to the government services as well. However, I think there is a side to the picture that ought not to be left out. In the first place, a man going into the Veterans' Bureau, through civil service, I think, is started at a salary of $3,200. He has to have his internship. He is then given whatever training he will get at the hands of Dr. Prince or his colleagues. I think we will admit that four months is a rather inadequate time for such training in general laboratory work, particularly if it includes roentgenology. However, for the man who has put in a year after his internship in pathology in one of the well recognized medical centers or pathologic institutes, it would seem to me that this would afford an unrivaled opportunity both for self-preservation and for the study of pathology. The army needs pathologists, and it is willing to pay them. The great difficulty is in getting a start. Once the men get a start in the government services, they go along swimmingly. But they cannot be taken in as pathologists when they are mere apprentices. What Dr. Wilson has outlined as the necessary training for pathologists evidently depends on the man himself. Some can get in a year what other men would probably need five years to get. I would suggest, however, the necessity of a man being untrammeled in his first year of postgraduate study. It is then that his enthusiasm is at the highest pitch and only at that time will he be willing to work fourteen, sixteen or eighteen hours a day. He should be given this outlook, then, of service in the armed forces of the United States or elsewhere or in some other position and told to go to it for a year or two, and then to get his experience and further training in the Veterans' Bureau or some other location. With such a plan I think in a few years there would be no cry for more pathologists.

DR. E. STANLEY RYERSON, Toronto: It seems to me that there is one aspect of the relation and the importance of pathology to medicine that has not perhaps been given the fullest amount of consideration. We have been hearing of the study of disease from the standpoint of the autopsy, of pathologic anatomy and of bacteriology, but it should not be forgotten that in the past ten years considerable advances have been made in pathologic chemistry. In the opportunities for research and development in pathology, that aspect of pathology should not be overlooked.

DR. ALFRED PLAUT, New York: It may not have struck some here that we have heard the word "pathology" frequently and the words "pathologic anatomy" seldom. When I came to this country from Germany several years ago, I considered myself a pathologist, without thinking much of what this term meant. I realized soon that the pathologist in the United States is quite different from the pathologist in middle Europe. In Germany especially pathology is entirely different. I have always considered the urinalysis and the blood count as belonging to the realm of the medical man. On coming here I realized that it belonged to my realm as a pathologist. Is not the science of the chemical and physiochemical consistency of freshly voided urine something belonging more to the medical man, especially the one who is chemically trained? The hematologist is a medical man and not a pathologist. Is it right, is it fair, to the pathologist, to burden him with the so-called routine work of the urinalysis and blood count? Is it really for the benefit of hematology and of urinalysis to be taken away from medical men and given over to the pathologist? Have not the greatest advances in chemical studies of urine, for instance, been made by medical men, and is not the same true in the advances of hematology? Furthermore, those who are now of the opinion that there is an enormous waste of time, money, energy and material in superfluous so-called routine analyses and blood counts will find that as soon as the urinalyses and blood counts are given to the medical men, as soon as there is again a personal connection between the man who treats the patient and the man who does the blood count, especially when he does it himself, this waste will be abolished.

DR. W. J. GAMBLE, Bay City, Mich.: Some time ago I sent out a questionnaire to find out how many people were practicing pathology in this country. It was surprising to learn that there are less than 500 persons practicing the so-called specialty of pathology, or clinical pathologists and others doing research work. That leaves available for more than 8,000 hospitals less than 500 men. It therefore becomes necessary for individuals, whether they like to do clinical pathology or not, to cover this so-called hybrid specialty of clinical pathology. I think that would answer the question. Some one has to do the work. One of the university chiefs said that when the so-called pathologists or clinical pathologists are sufficiently paid, there will be no lack of men.

DR. LOUIS B. WILSON, Rochester, Minn.: I should like to mention an impression which I have obtained in going about and talking with pathologists and from the letters of pathologists in reply to the questionnaire sent out by the Council; namely, that there are many pathologists in responsible positions, in large hospitals and with important university connections, who frankly are not interested in autopsy work and say so. They are interested in teaching and they are interested in research, but they are not interested in practicing pathology. They have a conception of pathology as one of the fundamental branches like anatomy or physiology, in which a man's interest must be in study or in teaching. But pathology has a practical side as well. It does not seem to me that a man can preserve his highest function, his balance, his judgment so as to teach pathology in the proper manner to students, if he does not practice pathology, any more than a surgeon who merely studied and talked surgery could preserve his breadth of view of surgical practices. It is perfectly all right to have men whose major interests in pathology are in research and men whose major interests in pathology are in teaching, but if they are to preserve their balance and if our departments of pathology are to be balanced departments in university work, it seems to me that the pathologist must practice pathology. Certain pathologists are so imbued with the sense of teaching that their only conception of a graduate student is a chap who is willing to sit down in a row with others and be talked to, to have facts poured into him. That is not the graduate student I come in contact with. That is not the attitude of the best men from the medical schools today who are seeking opportunities to perfect themselves further in technic and in judgment in the practice of pathology. The term graduate student has unfortunately come to mean, in this country, the man who is willing to give three whole weeks to the study of some specialty. I wish that we could forget it. I am absolutely convinced that many of the men directing the destinies of pathology in our medical schools today have an improper conception of the desire of some of the best men being graduated from our schools for opportunity to work under good guidance in their departments.

(To be continued)

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts daily at 10 o'clock, Central Standard Time, with the exception of Tuesday, when the health message is delivered at 10:30, and Friday at 9:45, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of April 7-12 is as follows:

April 7. Smallpox.
April 8. Care of the School Child's Health.
April 9. Preventing Crime.
April 10. Eyes for School.
April 11. Gas Poisoning.
April 12. The Medicine of the Sun.

Five Minute Health Talks may be heard over the Columbia Broadcasting System daily from 12 noon to 12:05 p. m.

The program for the week is as follows:

April 7. History Measures the Medical Milestones.
April 8. It's Only Chickenpox.
April 9. Pet Ideas About Colds.
April 10. Marathonitis.
April 11. Vagaries of the Vegetarians.
April 12. The National Narcotic Nuisance.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—The new $1,650,000 Cedars of Lebanon Hospital will be dedicated, April 27; it has 275 beds, and adjoining is a nurses' home with eighty rooms and an auditorium seating 300. About one third of the hospital beds will be devoted to those who cannot pay for medical care.

Personal.—Dr. Sven R. Lokrantz, medical director, Los Angeles city schools, recently was decorated by the King of Sweden for "his health work for the children of California and in a lesser degree for the children of Sweden."——An honorary doctorate was conferred by the Medical Faculty of the University of Freiburg, March 11, on Dr. Herbert M. Evans, professor of anatomy, University of California Medical School, Berkeley, in recognition "of his conspicuous anatomical and biological discoveries, especially in the sphere of vitamin research, both of which are scientific and of world interest."

Society News.—At the annual meeting of the California Tuberculosis Association in Merced, April 7-8, Dr. Joseph W. Mountin, U. S. Public Health Service, will speak on "Tendencies in Public Health Organization and Their Relation to the Tuberculosis Program," Dr. Henry Chesley Bush, Livermore, on "Parenchymatous Lesions in Childhood," Dr. Robert A. Peers, Colfax, on "Blood Sedimentation in Tuberculosis," and Drs. Philip H. Pierson, and William R. P. Clark, San Francisco, on "Healing in Tuberculosis."——The Pacific Physiotherapy Association was addressed, March 26, by Dr. John Severy Hibben, Pasadena, on "The Visible Spectrum and Infra-Red Frequencies."——The Los Angeles County Medical Association and the Physicians' and Surgeons' Fellowship Club were addressed at a joint meeting, March 20, by Dr. Lewis Gunther on "Root Pain of Osteo-Arthritic Origin as a Confusing Factor in Diagnosis," illustrated; Dr. Howard L. Updegraff, "Problem of Total Rhinoplasty," illustrated; Dr. William H. Daniel, "Proctology, Ambulant and Operative," and Dr. Conrad J. Baumgartner on the diagnosis and treatment of goiter.—— The Yuba-Sutter Counties Medical Society was addressed at Marysville, recently, by Dr. Albert H. Rowe, Oakland, on "Food Allergy."

DISTRICT OF COLUMBIA

Society News.—The Board of Trade of Washington is making an inquiry into the use of roentgen-ray films in Washington hospitals and by local physicians to determine the quality and manner of storage of roentgen-ray films.

Psittacosis Has Attacked Eleven Laboratory Workers.—In view of the fact that eleven employees of the Hygienic Laboratory in Washington have contracted psittacosis during the investigation at that institution, the work will be transferred to one of the government quarantine stations. While no definite selection has been made of the station, one of the following is expected to be chosen: Craney Island, near Norfolk, Va.; Reedy Island, in the Delaware River; Swineburne Island, at New York.

Lieut.-Col. Garrison Retires—Goes to Johns Hopkins.—Lieut.-Col. Fielding H. Garrison will assume the duties of librarian of the Welch Medical Library of the Johns Hopkins Medical School, May 1, when he will retire from the U. S. Army. The library represents a consolidation of three great collections of books—of the Johns Hopkins Hospital, of the School of Hygiene and Public Health, and of the School of Medicine. It has a capacity of 500,000 volumes and was named in honor of Dr. William H. Welch, who has taught at Johns Hopkins for about forty-five years. Dr. Garrison was assistant librarian in the surgeon general's office, Washington, D. C., from 1889 to 1922, and is the author of the well known History of Medicine.

Washington Stands Alone—No Sanatorium for Children.—A committee under the auspices of the Washington Tuberculosis Association has been appointed to call the attention of the public to the need for a sanatorium for tuberculous children in the District. Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, says that Washington is the only large city in the world which is not provided with a sanatorium or hospital to care for tuberculous children. The Children's Tuberculosis Clinic was organized last April by the association in cooperation with the health department, and since that time there have been 2,841 visits of child patients, 951 patients admitted and 178 children found to be infected with tuberculosis; in this period also at least five cases of juvenile tuberculosis have changed to the adult type of the disease.

FLORIDA

Dr. Williams Sentenced.—Dr. Horace J. Williams, Tampa, who it is reported pleaded guilty in February before the federal court of violating the Harrison Narcotic Act, was sentenced to five years in the federal prison or given the option of leaving the United States. He is reported to be planning to leave the country.

ILLINOIS

Personal.—Dr. Joseph De Silva was elected president and Dr. Stuart W. Adler secretary of the Rock Island Physicians' Club, Rock Island, March 6.——Dr. Floyd E. Fielding has been appointed health director of Bloomington, succeeding Dr. Henry H. Bishop.

Chicago

The Book Racket.—A man giving his name as H. R. Carter, who represents himself as a member of the American Legion, has been soliciting orders for a list of seven books on "Official Source Records," stating that the proceeds are to be used for disabled war veterans. On investigation it was found that the legion is not receiving the benefits and that this is a high powered book racket which should not be encouraged. The agent endeavors to collect the cash price, $98. He gives no receipt and leaves no literature for identification.

Society News.—Dr. Russell L. Cecil, assistant professor of clinical medicine, Cornell University Medical College, New York, will address the Chicago Medical Society, April 16, on "Etiology and Treatment of Chronic Arthritis."——The Chicago Urological Society was addressed, March 27, by Dr. Samuel J. Sullivan on "Gonorrheal Keratosis"; by Dr. Robert E. Cumming, Detroit, "Urography: The Development of a New Method with Physiologic Data," and by Drs. Harry B. Culver and Walter F. Hoeppner, "Management of a Case of Bilharziasis."——"Hearing Examination and Conservation" was the title of an address by Dr. Austin A. Hayden before a joint meeting of the Chicago Laryngological and Otological Society and the Chicago Medical Society, March 26; Dr. George W. Boot spoke on "Cancer of the Larynx."——The Chicago Laryngological and Otological Society will be addressed, April 7, by Dr. William Bloom on "Anatomy and Histology of Reticulo-Endothelial System," illustrated; Dr. Paul R. Cannon on "Reticulo-Endothelial System as a Defensive Mechanism," and Dr. Samuel M. Feinberg on "Nasal Allergy as Related to Hyperesthetic Rhinitis and Hay-Fever."——The Chicago Society of Industrial Medicine and Surgery was addressed, April 2, by Dr. Volney S. Cheney on "Aggravation of Pre-existing Disease by Trauma," and by Dr. Ramon Castroviejo on "Slit Lamp in the Diagnosis of Interocular Foreign Bodies."——Among others, Dr. John L. Yates, Milwaukee, addressed the Chicago Surgical Society, April 4, on "Making and Closing of Laparotomy Wounds."——Dr. Francis R. Packard, Philadelphia, gave an illustrated lecture on "William and John Hunter, a Study in Contrasts," before a joint meeting of the Institute of Medicine and the Society of Medical History of Chicago, March 28.

INDIANA

Society News.—Dr. Stuart Pritchard, Battle Creek, Mich., will address a joint meeting of the Indianapolis Medical Society and the Marion County Tuberculosis Association, April 8, on "Significance of Cough." The medical society will be addressed, April 22, by Dr. Russell R. Hippensteel on the malnourished school child, and by Dr. Charles D. Humes on "Parkinson's Residues of Encephalitis," illustrated; April 29, the speaker will be Dr. Ernest Sachs, St. Louis, on "Early Diagnosis of Brain Tumors."

KENTUCKY

Federal Narcotic Farm to Be in Kentucky.—The treasury department has selected a thousand acre site, located 4 miles from Lexington, for the first of the two narcotic farms authorized by Congress. Prisoners in federal penitentiaries who are drug addicts will be transferred to the farm for treatment and rehabilitation, which cannot be adequately carried out under present conditions in the penitentiaries.

Appointments to State Board.—The following members of the State Board of Health of Kentucky were appointed by the governor and confirmed by the Senate, March 20: Dr. E. Murphy Howard, Jr., Harlan, president; Dr. George S. Coon, Louisville; Dr. Benjamin B. Keys, Murray; Carl J.

Johnson, D.O., Louisville; Dr. J. Watts Stovall, Grayson; Dr. Frank L. Johnson, Livermore; Mr. Addison Dimmitt, Louisville; Dr. Lawrence T. Minish, Frankfort, and Dr. Arthur T. McCormack, Louisville, secretary.

LOUISIANA

Society News.—The New Orleans Gastro-Enterological Society, January 23, elected Dr. Daniel N. Silverman president for the ensuing year.——Dr. Henry W. E. Walther, New Orleans, addressed the St. Tammany Parish Medical Society, Mandeville, February 14, on "Urologic Problems in General Practice and Suggestions for Their Solution."

Munch Ordered to Prison.—The fifth circuit federal court of appeals at New Orleans, March 22, ordered the immediate issuance of a mandate for the incarceration of George A. Munch, Tampa, Fla., convicted of mail fraud in connection with alleged "diploma mill" operation. The court order was issued following the second confirmation of Munch's conviction.

MARYLAND

Society News.—A survey of the mental hygiene activities of Boston, with Dr. George H. Preston, commissioner of mental hygiene of Maryland, as director, has been undertaken by city and state agencies. Dr. Preston will devote part time to the task, with the assistance of a full-time psychiatric social worker. The survey is expected to be completed in October.

Dr. Kelly Presents Books to Welch Library.—A collection of 500 books relating to the advancement of women in all fields was presented, March 14, to the Welch Medical Library of Johns Hopkins University by Dr. Howard A. Kelly, emeritus professor of gynecology. It will be known as the Florence Nightingale Library. The collection includes volumes relating to Miss Nightingale, books pertaining to the political and social advancement of women since 1793, and many rare editions. Dr. Stephen d'Irsay, associate in the Institute of the History of Medicine, Johns Hopkins University, will sail for Europe in a few weeks to assemble data on the history of universities for the Welch Library. Books, old registers, biographies of eminent professors and correspondence will be gathered. While in Paris, Dr. d'Irsay will address the Carnegie Endowment for World Peace on "The International Character of Universities as Developed by Their Histories."

Dr. Welch Honored.—Dr. William Henry Welch, professor of the history of medicine, Johns Hopkins University School of Medicine, will be honored on his eightieth birthday, April 8, by a celebration, which will take place simultaneously in London, Paris, Berlin, Leipzig, Tokyo and Peiping, Baltimore, Cincinnati, New Haven, New York and Washington, D. C. President Hoover will speak in Memorial Continental Hall, Washington, at noon, and will be heard over a national hookup of the National Broadcasting Company. One feature of the celebration will be the presentation of the first print of the dry-point portrait made by Alfred Hutty, the etcher, Charleston, S. C., and the simultaneous presentation of other prints from the same etching to more than forty institutions in this country and abroad. Dr. Simon Flexner, New York, is chairman of the executive committee in charge of arrangements. Dr. Livingston Farrand, Ithaca, N. Y., will deliver the opening address at the Washington ceremonies.

MASSACHUSETTS

Bill Introduced.—House bill 1196 proposes to create a commission to investigate the prevalence of addiction to habit-forming drugs.

MISSISSIPPI

Bill Enacted.—S. B. 13, safeguarding the distribution and sale of certain dangerous, caustic or corrosive acids, alkalis and other poisonous substances by requiring that they be labeled "Poison," has become a law.

Bills Introduced.—H. B. 567 proposes to levy on physicians an occupational tax equal to 0.25 per cent of gross income. H. B. 242 proposes to regulate the practice of podiatry and to provide for the examination and licensing of podiatrists by the state board of health.

MISSOURI

Court Upholds Revocation of Dr. Ball's License.—The Missouri Supreme Court, March 4, upheld the action of the state board of health in revoking the license of Dr. Samuel E. Ball, Excelsior Springs, for circuitously and illegally soliciting business for his sanatorium through the Health Culture company which he owned. The license was revoked in November, 1926.

Physicians Tried for Narcotic Violations.—Dr. George W. Benitz, St. Joseph, was sentenced in federal court to one year and three months in the penitentiary at Leavenworth and fined $1,000 for violation of the Harrison Narcotic Law at St. Joseph, March 3. Dr. Fenton N. Goodson, colored, St. Joseph, pleaded guilty to the same offense and is serving his sentence at Leavenworth. Dr. Collis I. Roundy, St. Joseph, will soon be tried, it is said, having been charged with the same offense.

Dr. Graham to Lecture in Australia.—Dr. Evarts R. Graham, St. Louis, professor of surgery, Washington University School of Medicine, will leave for Australia in June to give a series of six lectures at the University of Melbourne during the last two weeks of July on chest surgery and conditions of the gallbladder. Dr. Graham and his family will return in September. Dr. Graham did pioneer work in the development of cholecystography.

Society News.—Dr. Hyman I. Spector gave a lantern slide demonstration of "Study of Lung Abscesses with Special Emphasis on Conservative Treatment" before the St. Louis Medical Society, March 25; Dr. Jacob J. Singer spoke on "Tumors of the Chest," and Dr. Leroy Sante, "Use of X-Rays in the Detection of Chronic Lung Suppuration."——The Clay County Medical Society was addressed, recently, at Excelsior Springs by Dr. Samuel D. Henry on "Acute Infections in the Adult Respiratory Tract," and by Dr. Burton Maltby, Liberty, on "Acute Infections of the Respiratory Tract in Children."——Dr. Paul F. Cole, Springfield, gave a paper on "A Tour of the Colon with an X-Ray Machine" before a recent meeting of the Greene County Medical Society.——The March 4 meeting of the Jasper County Medical Society was addressed at Joplin by Dr. Edward J. Burch, Carthage, on "Management of Normal Labor."——The St. Louis County Medical Society was addressed at Kirkwood, March 13, by Dr. Theodore C. Hempelmann, St. Louis, on "Throat Infections in Children."——Drs. Alphonse McMahon and William T. Coughlin, St. Louis, addressed the Central Illinois Medical Association, March 25, at Decatur, Ill., on "The Heart in Hyperthyroidism" and "Early Diagnosis and Treatment of Tumors of the Brain," respectively.

NEBRASKA

Graduate Course Offered at State University.—The University of Nebraska College of Medicine will offer a graduate course, May 5-12, preceding the annual meeting of the state medical society at Lincoln, May 13-15. This year the course will be offered under the auspices of the department of internal medicine and will be confined largely to practical work in the wards and clinics. The major interest will center around diseases of the lungs as tuberculosis, the pneumonias, pneumococcic infections, asthma, bronchiectasis, and post-operative pulmonary conditions; diseases of metabolism, majoring in thyroid diseases and diabetes; diseases of the circulatory system and blood-forming organs; diseases of the gastro-intestinal tract; manifestations of anaphylaxis, the arthritides and diseases of the skin. The library will be available at all times. Work will begin at 8 o'clock each morning. The fee for this course will be $10, and the number accepted will be limited to thirty. Unless ten have registered by April 15 the course will be withdrawn. Address communications to the dean's office.

NEW YORK

Society News.—The Medical Society of the County of Albany was addressed at Albany, March 26, by Dr. Richard Kovacs, New York, on "The Present Status of Physical Therapy," and by Dr. Edward S. Godfrey, Jr., "Rationale of the New Communicable Disease Regulations."

Personal.—Dr. Charles I. Maggio resigned his position as a medical examiner in the state department of labor, Rochester Bureau of Workmen's Compensation, effective March 15, to enter private practice. Dr. Charles W. Caccamise succeeded as a medical examiner, April 1, Dr. William D. Wolff, who died, Dec. 24, 1929.——Dr. Abraham Jablons has been appointed a lieutenant commander, medical corps, U. S. Naval Reserve, and assigned as medical officer to the thirty-second fleet division, New York.

Bill Enacted.—S. B. 256, amending the Medical Practice Act by providing that an applicant for a license to practice medicine must submit evidence that he has "completed not less than four satisfactory courses of at least eight months each in a medical school," has been enacted as chapter 157 of the laws of 1930. This section of the Medical Practice Act heretofore provided that an applicant for a license to practice medicine must submit satisfactory evidence that he "had studied medicine not less than four school years, including four satisfactory

courses of at least eight months in four different calendar years in a medical school."

Bills Introduced.—S. B. 1523 and H. B. 1961 propose to prohibit the sale of drugs, chemicals, medicines or poisons to unlicensed persons, firms or corporations when there is reasonable cause to believe that such articles will be sold at retail. H. B. 2084 proposes to provide for the examination and licensing of laboratory technicians, and defines a laboratory technician as a person "who renders technical service and laboratory work designed and intended to be used as an aid in the investigation, prevention, diagnosis and/or treatment of diseases or ailments of the human body in a clinical, research or public health laboratory or in a laboratory or office maintained by a registered physician or group of physicians in connection with his or their practice." H. B. 2110 proposes to create a bureau of milk control and inspection and to provide for the sanitary control and inspection of milk and cream.

New York City

Symposium on Psittacosis.—The Greater New York Public Health Officers' Association held a symposium on psittacosis, March 25; those participating in the discussion were Dr. Charles Krumwiede; Dr. George W. McCoy, U. S. Public Health Service; Dr. William C. Miller; Dr. William H. Park, and Dr. Thomas M. Rivers. Dr. Harry L. Hopkins, director, New York Tuberculosis and Health Association, spoke on "Importance of the Public Health Officer in the Community."

Society News.—Prof. L. Lichtwitz of Altona-Elba will lecture on successive evenings, May 19-23; on the following subjects: (1) Conceptions of Pathologic Physiology of the Kidney; (2) Theory and Practical Application of Diuretics; (3) Diabetes Insipidus (Hypophyseal Diseases); (4) Gout; (5) Stone Formation.——At the annual conference of state committees on tuberculosis and public health of the State Charities Aid Association, April 2-4, proper organization in carrying on health projects was discussed, including a critique on health education and publicity, a review of activities of health associations and actual health demonstrations.——At the meeting held April 3, at the New York Academy of Medicine, the program presented in cooperation with the New York Academy of Dentistry and the section on ophthalmology included a symposium on oral infections and their relation to diseases of the eye. The section of surgery was addressed, April 4, by Drs. Frank E. Adair and George T. Pack, on a clinical and microscopic study based on 250 cases of melanoma, and by Dr. Paul K. Sauer on "Diverticula of the Appendix." In the series of afternoon lectures at the academy, Dr. Samuel Silbert discussed, April 4, "Diseases of the Arteries of the Extremities and Their Treatment." The twentieth and concluding lecture of this series will be given by Dr. Alexander Lambert, April 11, on "Drug Addiction."——Dr. Frederick Tilney will address the forty-fifth annual meeting of the trustees and members of Montefiore Hospital for Chronic Diseases, April 6, on "Neuropsychiatry and Social Progress."

OHIO

Society Honors Dr. Stewart.—The Academy of Medicine of Cleveland conferred honorary membership on Dr. George Neil Stewart, March 21. Dr. Stewart came to Cleveland as professor of physiology and histology at Western Reserve University Medical School in 1894, and, in 1903, accepted the chair of physiology in the University of Chicago. In 1908, he was induced to return to Cleveland as director of the H. K. Cushing Laboratory of Experimental Medicine, which was a new department created at Western Reserve and endowed by friends as a memorial to the late Dr. Henry Kirke Cushing. To practitioners over the country, Dr. Stewart is best known through his "Manual of Physiology," first published in 1895.

Society News.—Dr. Henry J. John, Cleveland, addressed the Academy of Medicine of Cincinnati, March 10, on "Diabetes."——A feature of the March 7 meeting of the Miami County Medical Society, Piqua, was the presentation of two scientific motion pictures on "The Influence of Drugs on Gastro-Intestinal Motility" and "The Anatomy of the Abdominal Wall."——The Mahoning County Medical Society was addressed at Youngstown, February 18, by Dr. Irving W. Potter, Buffalo, on "Technic of Elective Version" and "Immediate Repair of Birth Canal Injuries."——The Summit County Medical Society was addressed at Akron, March 4, by Dr. William D. Johnson, Batavia, N. Y., on "Surgery of the Handicapped Patient."——Dr. Sidney A. Chalfant, Pittsburgh, addressed the Jefferson County Medical Society at Steubenville, recently, on "Carcinoma of the Fundus of the Uterus."——The March 3 meeting of the Athens County Medical Society at Nelsonville was addressed by Dr. Murl E. Fulk, Philo, on "Why Standardization in Industry: Its Meaning and Application to Measurements of the Human Body," and by Dr. John L. Webb, Carbon Hill, on "Thrombo-Angiitis Obliterans (Buerger's Disease)."——Dr. Frank Gordon Lawyer addressed the Guernsey County Medical Society, Cambridge, recently, on "Current Medical Events."——The Perry County Medical Society, New Lexington, was addressed, March 17, on "The Surgical Consideration of Jaundice" by Dr. Edwin J. Stedem, Columbus.——The Hempstead Academy of Medicine was addressed at Portsmouth, March 10, by Dr. Charles E. Howard, Cincinnati, on "Rectal Hemorrhage."——Among others, Drs. Arthur M. Hauer and Morris Goldberg addressed the Columbus Academy of Medicine, March 10, on "Practical Considerations of Paranasal Sinuses" and "Laryngeal Neoplasms and Their Treatment," respectively.——Dr. Arthur G. Helmick, Columbus, addressed the Knox County Medical Society, recently, on "Errors of Diagnosis in Pediatric Practice."——Among others, Dr. Albert H. Freiberg, Cincinnati, addressed the Pickaway County Medical Society, Circleville, recently, on "The Place of Medicine in Modern Life."

PENNSYLVANIA

Hospital News.—Plans were approved, March 5, by the board of trustees for the Cumberland Valley institution for male defective delinquents. The institution is to be located near White Hill in Cumberland County. It is planned eventually to accommodate 2,000 inmates and will cost approximately $6,000,000 to complete. The last legislature appropriated sufficient funds to pay the architect and provide the sewerage system.

Dr. Sturgeon Honored.—Dr. John D. Sturgeon, Sr., celebrated his fiftieth year in the practice of medicine, March 5, all of which time has been spent in Uniontown. Forty years after Dr. John Sturgeon's grandfather began practicing in Uniontown, his father, William H. Sturgeon, opened offices there. Dr. John Sturgeon, Sr., in turn began practice in Uniontown thirty years after his father and was followed by his son forty years after his own venture. Dr. Sturgeon, Sr., was tendered a banquet by the staff of the Uniontown Hospital, of which he is one of the founders and a charter member of the staff.

Society News.—The Allegheny County Medical Society, Pittsburgh, will be addressed, April 8, by Dr. James Wallace, on "Congenital Dislocation of the Hip"; Dr. John A. Hagemann, "The Passing of the Country Doctor"; Dr. Robert L. Anderson, "Ureteral Obstructions in Kidney Infections," and Dr. Henry T. Price, "Meningitis in Infancy."——The Pittsburgh Ophthalmological Society was addressed, March 24, by Dr. John N. Evans, Brooklyn, on visual field defects.——The Northampton County Medical Society was addressed by Dr. Donald Guthrie, Sayre, March 21, at Easton on "Early Diagnosis and Treatment of Acute Intestinal Obstruction."——A symposium on tuberculosis was held, March 14, by the Lycoming County Medical Society at Williamsport; the speakers were Drs. William Waddell, Jr., Ferd E. Weddigen, Edwin M. Bell and W. Eugene Delaney, Jr.

Philadelphia

Woman's College Celebration.—The eightieth anniversary of the foundation of the Woman's Medical College of Pennsylvania was celebrated, March 11. Built in 1870, the college was said to be the first of its kind in the world and for a time, was the only college in the western hemisphere devoted exclusively to the education of women. The $1,000,000 building on the new site is expected to be completed in September (THE JOURNAL, April 2, 1927, p. 1089).

Bronchoscopic Studies at Temple.—Dr. Chevalier Jackson, professor of bronchoscopy and esophagoscopy, Temple University School of Medicine, recently announced that the board of trustees had decided to construct an extensive laboratory system for research into all phases of diseases of the lung. It was announced also that the Temple University Medical Center, created recently by the consolidation of Temple University School of Medicine, Temple University Hospital and School for Nurses, is preparing to conduct exhaustive researches into the question of the obstruction of the air passages in children, following diphtheria and other diseases.

Society News.—The afternoon seminar, arranged under the auspices of the Philadelphia County Medical Society, was given, March 28, by Dr. Herbert T. Kelly on "Diabetes."——The Philadelphia Neurological Society was addressed, March 28, by Drs. Edward D. Hoedemaker and Michael A. Burns on

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"Effect of Stramonium in Parkinsonism," and Dr. Grayson P. McCouch, "Coordination of Antagonistic Muscles."—— Dr. Chevalier Jackson was tendered a dinner, March 19, by the section on otolaryngology of the College of Physicians of Philadelphia; the section was presented with a gavel made by Dr. Jackson in his workshop. Dr. Burton Alexander Randall spoke on "The History of the Section."——Sir Wilfred Grenfell delivered the twenty-second Mary Scott Newbold Lecture, April 2, at the College of Physicians of Philadelphia, on "Medicine in the Subarctic," illustrated.

University to Construct Children's Ward.—The trustees of the North American Children's Sanitarium for the Treatment of Surgical Tuberculosis have given its property, at Surrey and Victoria avenues and the beach, Ventnor, N. J., to the University of Pennsylvania, under the terms of which the property will be sold by the university, and $100,000 of the sale price will be used toward the construction of the children's ward of the university's Graduate Hospital at Nineteenth and Lombard streets, which will be known as the North American Children's Ward. The remaining funds from the sale will be used as endowment to be called the North American Children's Ward Endowment Fund. The sanitarium which ceased operations Dec. 1, 1929, was established in 1910. It was said to be the first thoroughly equipped institution devoted exclusively to the treatment of poor children with tuberculosis of bones and joints.

TENNESSEE

State Society Centennial Celebration.—The one hundredth annual meeting of the Tennessee State Medical Association will be at Nashville, April 8-10, at the Hermitage Hotel, under the presidency of Dr. Leon T. Stem, Chattanooga. Dr. Olin West, secretary and general manager, American Medical Association, Chicago, will speak on "Medical Organization, Its Development and Purpose"; Dr. Morris Fishbein, editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, on "Evolution of the Code of Medical Ethics and Its Influence Today," and Dr. Malcolm L. Harris, President of the Association, "Economic Status of Medicine Today." Additional speakers will be Dr. William Allen Pusey, Chicago, "History of Eczema for One Hundred Years"; Dr. C. Jeff Miller, New Orleans, "Surgery of Uterine and Ovarian Tumors; a Retrospect"; Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, Washington, D. C., "Most Outstanding Achievement of Preventive Medicine in One Hundred Years"; Dr. John B. Deaver, Philadelphia, "Evolution of Abdominal Surgery"; Dr. John O. Polak, Brooklyn, "Most Outstanding Accomplishments in the Field of Obstetrics in the Last Hundred Years"; Dr. James S. McLester, Birmingham, Ala., "Arterial Hypertension and Its Management"; Dr. Walter C. Alvarez, Rochester, Minn., "Puzzling Types of Gastro-Intestinal Disease"; Dr. John Shelton Horsley, Richmond, Va., "Intravenous Administration of Glucose in Ringer's Solution"; Dr. Isaac A. Abt, Chicago, "Evolution of Pediatrics"; Dr. William H. Wilmer, Baltimore (subject not announced); Dr. Wells Ferrin Smith, Little Rock, "Inguinal Hernia," and Dr. Darmon A. Rhinehart, Little Rock, Ark., "An X-Ray Demonstration of Colles' Fracture and Other Injuries of the Forearm and Hand." Many Tennessee physicians are on the program with interesting subjects. "A Return of the Immortals in Medicine," a performance in costume, presented by a committee of the Nashville Academy of Medicine and Davidson County Medical Society, will be a feature of the meeting.

VIRGINIA

Bill Enacted.—H. B. 8, abolishing the registration of assistant pharmacists after March 1, 1931, has become a law.

WASHINGTON

Hospital News.—A new two story hospital with a capacity for ten patients is being constructed at Kirkland.——The new addition to St. John's Hospital, Port Townsend, was formally opened recently. The building with equipment is valued at $90,000.

GENERAL

Society News.—National Hospital Day will be observed May 12, for the purpose of honoring the memory of Florence Nightingale, who was born in Florence, Italy, May 12, 1820, and to acquaint the public with facts concerning the management of hospitals.

Prize for Essay on Goiter.—Beginning this year the American Association for the Study of Goiter will award a cash prize of $300 annually for the best original thesis dealing with some phase of the goiter problem. Theses should be submitted by June 1 to Dr. Walter M. Simpson, chairman of the essay committee, Miami Valley Hospital, Dayton, Ohio. The award will be given immediately following the coming meeting of the association, which is to be held in Seattle, July 10-12.

International Congress of Dermatology and Syphilology.—The eighth International Congress of Dermatology and Syphilology will be held in Copenhagen, August 5-9. Among the speakers will be Drs. Darier, Paris, and Jadassohn, Breslau, whose subject will be "Etiology and Pathogenesis of Eczema"; Drs. Truffi, Padua, and Wade H. Brown, New York, will discuss "Syphilis: Immunity, Reinfection, Superinfection," and Drs. Adamon, London, and Reyn, Copenhagen, "Tuberculosis of the Skin and Its Treatment." Delegates from the United States are Drs. William Allen Pusey, Chicago, and Howard Fox, New York. Dr. Svend Lomholt, Raadhusplads 45, Copenhagen, Denmark, is secretary general.

Medical Bills in Congress.—S. J. Res. 93, authorizing an appropriation of $50,000 to erect, in the District of Columbia, a monument to Major Gen. William Crawford Gorgas, has passed the Senate. H. R. 2667, the tariff bill, has passed the Senate, with amendments, and has been returned to the House. The bill increases the duty from 65 per cent ad valorem to 85 per cent ad valorem on biologic, chemical, pharmaceutic and surgical articles and utensils of all kinds, including all scientific articles and utensils, whether used for experimental purposes in hospitals, laboratories, schools or universities, colleges or otherwise, when wholly or in chief value of glass. It provides for an increased duty, from 45 per cent ad valorem to 60 per cent ad valorem, on spectroscopes, saccharimeters, colorimeters, hemacytometers, ophthalmoscopes, slit lamps, corneal microscopes, optical measuring or optical testing instruments, testing or recording instruments for ophthalmologic purposes, frames and mountings therefor and parts of any of the foregoing. The rates on metal surgical and dental instruments, including hypodermic needles, hypodermic syringes and forceps, remain as they are under existing law, the Senate having declined to agree to the increased rates proposed by the House. The tariff bill provides for a duty of 25 per cent ad valorem, as compared with a duty of 40 per cent ad valorem proposed by the House, on autoclaves, if over 20 inches at the largest inside diameter (exclusive of nonmetallic lining), and having metal walls 1¼ inches or more in thickness. H. R. 8807, relating to the coordination of the public health activities of the federal government, has passed the House, with amendment forbidding discrimination among schools of medicine. H. R. 10865, authorizing Dr. William S. Thayer and Dr. William H. Welch to accept the awards of the Legion of Honor tendered to them by the French government, has passed the House. H. R. 11103, introduced by Representative McSwain, South Carolina, proposes to authorize the Secretary of War to present annually to a selected officer in the Medical Corps, U. S. Army, a medal to be known as "the medal of medical merit," in recognition of superior services and scientific attainments. H. H. 11143, introduced by Representative Porter, Pennsylvania, proposes to create in the Treasury Department a bureau of narcotics and further proposes to amend the Narcotic Drugs Import and Export Act to exclude from its purview (1) coca leaves which do not contain cocaine, ecgonine or any salt, derivative or preparation from which cocaine or ecgonine may be synthesized or made, and (2) any salt, derivative or preparation of coca leaves which does not contain cocaine, ecgonine or any ingredient or ingredients from which cocaine or ecgonine may be synthesized or made. H. R. 11192, introduced by Representative McSwain, South Carolina, proposes to provide for the retirement of disabled nurses of the Army. H. R. 11212, introduced by Representative Crail, California, proposes to provide a medal and pension for James C. Burke, in recognition of his services in connection with the experimentations during the malarial fever investigations in the Philippine Islands.

CORRECTION

Postoperative Embolism and Phlebitis.—In THE JOURNAL, Nov. 9, 1929, in an article with this title, Drs. R. H. Miller and Horatio Rogers said, in quoting Dr. Norman J. Kilbourne of Los Angeles, "The injection treatment of varicose veins has been responsible for five cases of embolism in 53,000 injections—0.01 per cent." He writes to correct this statement and say that it was not in 53,000 injections but in 53,000 cases, in each of which there were probably about six injections, so that it should read that there have been five cases of true embolism in about 300,000 injections, making the incidence of embolism, of course, very much lower.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 15, 1930.

Physician May Have to Pay Extra Cost of Prescription

Among the evils arising from the socialistic character of the national health insurance act is extravagant prescribing. The check of expense, which operates in the case of private patients, is abolished and neither physician nor insured patient has any direct interest in economy. However, if a physician's prescriptions cost considerably more than the average, an inquiry may be held at which he is asked to justify his action. Failing this, he may have to pay the extra cost. But the difficulty of deciding as to whether prescribing is excessive is often difficult. A firm of physicians practicing in London has recently been fined $500 for excessive prescribing, particularly with regard to cod liver oil and malt. The physicians maintained that the prescriptions were required because of the poor state of nutrition of their patients. Against this it was held that cod liver oil should be prescribed only as a drug and not to satisfy alimentary needs, for which the state has made other provision than the insurance fund. A committee of physicians, pharmacists and others appointed by the minister of health to indicate what may be prescribed as drugs under the insurance act has just issued a report. The committee was invited to distribute 165 substances into the categories (*a*) never a drug; (*b*) always a drug, and (*c*) sometimes a drug. The committee has suggested that an insurance committee shall have power to recover from a physician the cost of any substance prescribed which is not a drug or a medicine. When doubt arises the question should ultimately be referred to two physicians appointed as referees by the minister of health. Examples of category *a*—never a drug—are acidophilus milk, the various patent foods, brandy, champagne, meat extracts (other than liver extracts) and peptonizing powders. Category *b*—always a drug—is divided into: 1. Substances which an insurance practitioner might reasonably be called on to justify the prescribing of. Examples are agar-agar, Angier's emulsion, antiphlogistine, boroglyceride, Californian syrup of figs, Fellows' syrup, Formamint tablets, Glycothymoline, Heath and Heather's herbs, liver extracts, and metatone. 2. Preparations of which the composition is undisclosed. The committee considers that their prescribing is most undesirable and that only exceptional circumstances can justify it. Examples are Andrew's liver salts, Beecham's pills, Eno's fruit salts, Hair's and Himrod's asthma cures, kruschen salts, phospherine, phylosall and tamar indien. Category *c*—sometimes a drug—contains substances such as cod liver oil and extract of malt. While it may be argued that such substances should be classified as foods and not as drugs, their usage in certain cases necessitates their being recognized as drugs. But the committee considers that they are occasionally prescribed in circumstances which would render it difficult to establish that their use is therapeutic rather than alimentary. A list is given of substances the prescribing of which is justifiable only in special circumstances. This includes Allen and Hanbury's malt and oil, antiseptic soaps, bynol haematogen, maltine, Scott's emulsion, hemoglobin and yeast-vite tablets. Finally, the committee amplifies its reasons in special cases. While peptonizing powders are adjuncts in the preparation of foods and therefore are not drugs, they would regard as drugs their components; e. g., pepsin to be taken internally in prescribed doses. The committee has had difficulty in the classification of spa and mineral waters, as they vary in composition from a weak saline solution suitable for the dinner table to a strong saline to be used as a drug. Each case must be considered on its merits; but, when the composition is undisclosed, it should be placed in the class *b* 2.

Decline in the Cost of Pensions

The twelfth annual report of the ministry of pensions for the year ended March 31, 1930, has been issued. The total number of persons in receipt of pensions or allowances on that date was 1,476,000, comprising 24,500 officers, 1,050 nurses, 477,700 men, 142,000 widows, 342,800 children and 487,550 parents and other dependents. Causes such as death (24,000 in the year), children attaining the pensionable age limit of 16 (about 70,000 in the year) and the remarriage of widows (2,500 in the year) continued to cause a steady decline. The expenditure for the year was $283,000,000, being $15,000,000 less than in the previous year. The sum of the expenditure since the establishment of the ministry amounted to $4,225,000,000. The decline in the cost of pensions and other benefits was about 3.8 per cent, while the medical expenditure continued to fall in consequence of the diminished demand for treatment. The number of first awards of disablement pensions made during the year was 514, and 47,424 cases were examined by the medical boards. The demand and need for treatment continued steadily to decline, only 41,158 courses being provided during the year for disabled men, against 66,609 in the previous year. The number of disabled men undergoing treatment at the end of the year was 8,332. Institutions for inpatient treatment were reduced from forty-four to thirty-nine, with a total bed accommodation of 5,048. The number of ministry clinics especially established for outpatient treatment was reduced from thirty-five to twenty-eight, but the number of civil hospitals available for this treatment was increased from sixty-three to 172, as in view of the decline of numbers this arrangement was more economical. During the year, 959 pensions were granted to the parents or dependents of deceased men. These were mainly in respect of men killed in action or who died of wounds and were made to parents who had become incapable of self-support. The pensions were based on the amount which the deceased might reasonably have been expected to contribute had he survived.

Case of Carbon Monoxide Poisoning on a Warship

An inquest was held at Portsmouth on the body of a shipwright, aged 23. With other men he was engaged in opening for survey the compartments in one of the protective bulges of the warship *Hood*. Although the regulations forbid any one to enter these compartments until it has been open for twenty-four hours, he stepped into one immediately after it had been opened because he wanted to see if there were others beyond. He fell unconscious. Two shipwrights put on gas masks and tried to rescue him but he was dead when removed. The verdict was that he died from carbon monoxide poisoning. The jury commended the courage of the men who tried to rescue him.

Ireland's Unmarried Men Increase

The fifth volume of the 1926 census of the Irish Free State, which has just been issued, deals with ages, orphanhood and conjugal conditions. The remarkable fact is disclosed that the proportion of the unmarried is much higher than in any other country and that marriages take place at a comparatively late age. Thus, 80 per cent of the males between the ages of 25 and 30 are unmarried, while the percentage in the United States is only 39. Although emigration almost ceases between the ages of 35 and 40, the proportion of unmarried men at these ages is more than thrice as great as in England. The percentage of unmarried women is also high; between the ages of 25 and 30 it is 62, against 41 in England and 23 in the United States. The percentage of unmarried women at every

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age is about 50 per cent higher than in England and nearly three times as great as in the United States. Further, though the rate of emigration has been decreasing, the percentage of the unmarried has been increasing. On the other hand, the married women bear far more children than in other countries. They rear 36 per cent more children under 5 years of age than are reared in Canada and 85 per cent more than in the United States. Generally married women of equal ages rear twice as many children as in the United States and nearly twice as many as in England. But in spite of this fertility the birth rate is kept down by the fewer and later marriages. The explanation seems obvious. The economic pressure is depressing the birth rate in all European countries and artificial restriction plays a part in most of them. The Free State population is predominantly Roman Catholic and the church absolutely condemns "birth control" and the government has passed a law rendering any propaganda on the subject illegal. But the economic difficulty remains and takes effect in another but equivalent manner.

Report of Medical Research Council

The annual report of the medical research council deals with virus diseases at length. Great difficulty has been found with the work on this subject. As to measles, the only animal that appears to be affected by the virus is the monkey, but it seems that the disease cannot thereafter be passed from monkey to monkey. If influenza is a virus disease, as many now hold, progress is barred by the fact that it is not transmissible to animals.

YOUNG RECRUITS FOR RESEARCH WANTED

An important scheme for the development of clinical medicine is outlined. In 1916, as a first move in this direction, the council appointed Sir Thomas Lewis to be a member of its whole-time scientific staff and made provision that his whole energies, with those of junior associates, could be given to research in clinical medicine. He was freed entirely from private practice in order that not only his working hours but as much as he cared of his leisure should be given to thought and reading. Secondly, by having no general teaching and clinical responsibilities he had no need to maintain his knowledge at concert pitch over the whole clinical field but was set free for intensive exploration of his own field of research. Of the success of this experiment there can be no doubt. The output of work from his unit in the scientific study of the heart and blood vascular system in the last decade has constituted the central stream of progress in these studies anywhere. The council therefore wishes to recruit young workers of ability who are prepared to test themselves in this branch of research with the view to its becoming their life work. The committee is not only prepared to help these recruits in a preliminary period of training and probationary work but also to increase the numbers of workers in the clinical field on their permanent staff as soon as they can select the candidates whose training is adequate and whose work in the field has proved that the candidate on the one hand and the council on the other may have confident hopes of his success. The report also urges that, in the use of radium for cancer, research and treatment must go hand in hand. The council is glad to learn that one of the first decisions of the radium commission has been to concentrate the new supplies of radium at centers where adequate facilities exist for its use and where safeguards against its dangers can be guaranteed. The council in its report inquires: Is there a science of experimental medicine of which the material for study is the human patient? and Is scientific work by the physician or the surgeon limited to the application of scientific results worked out elsewhere in the laboratory and delivered to him for use? The answer given by the council is that there is not yet any stabilized or organized science of clinical medicine. Whereas young men may find academic careers in the study of physiology, biochemistry or pathology, no such career is possible at present in the study as opposed to the practice of clinical medicine. The practicing physician has to devote his energies to the diagnosis and treatment of the diseases of his patients—a process requiring the exercise of practical arts of eye, ear and hand, habitually cultivated, and a power of making quick decisions. Except in rare instances he cannot make the advancement of science a primary object. This task ought to be confided to workers in a position to ignore individuality and even, by multiplying cases, to ignore it. Hence the proposal, which is a most important new departure in this country.

PARIS

(From Our Regular Correspondent)

Feb. 26, 1930.

Prophylaxis Against Psittacosis

Thus far there have been no cases of psittacosis in France. But since there are cases in central Europe and in Switzerland, and in view of the fact that the public is aroused by reason of the constant communication with those countries, prophylactic measures have been adjudged necessary, to ease the public mind. At its February 17 session, the Conseil supérieur d'hygiène publique de France interested itself in the question, and adopted various measures applicable to parrots, parrakeets and other birds: (1) an immediate embargo on importation; (2) ban on importation of parts of cadavers; (3) a temporary restriction of trade in parrots by itinerant venders. The owners of parrots and parrakeets have been urged by placards to take great precautions in case of sickness occurring in these birds.

Sodium Hyposulphite in Treatment of Carbon Monoxide Poisoning

Accidents due to slow and chronic intoxication resulting from breathing carbon monoxide continue to claim many victims during the winter, when many apartments are heated with stoves of slow combustion. Nearly all these stoves produce toxic gases, which, when the chimney ventilation is poor, are forced back into the apartment. To these may be added numerous accidents caused by illuminating apparatus and gas heaters. Heretofore treatment has consisted in the inhalation of pure oxygen, together with venesection followed by blood transfusion. In Paris a special service has been organized by the prefecture of police, and an automobile squad of firemen with gas masks and gas containers will come in response to a telephone call at all times of the day or night. Dr. Artault de Vevey has made known a simple means of combating such accidents, which has given good results and is beginning to be used in the city hospitals and in the infirmaries of mining camps. The method consists in the ingestion of sodium hyposulphite. This substance, which is employed universally in photographic work, may be procured anywhere at little expense. The ordinary dose is from 8 to 20 Gm. (over a twenty-four hour period) dissolved in water. If the patient is in coma and is unable to swallow, the solution may be introduced into the stomach by a nasal sound or given as a lavage. In urgent cases the physician may inject intravenously 25 cc. of a 10 per cent solution, prepared for the occasion with boiling water, then filtered carefully through a sterile cloth. The remedy is harmless. In from six to ten hours in mild cases, and within twenty-four hours in the severe cases, the signs of intoxication gradually disappear. It is advisable to continue the use of the drug, after recovery, for a week. Dr. Artault de Vevey cited the case of a woman intoxicated every winter in her apartment by emanations from a defective flue, which the house owner refused to have repaired. She acquired the habit, as she was unable to change her lodging, of taking every day a small dose of sodium hyposulphite, having discovered the good effects of this

salt on the occasion of a more serious poisoning, which had necessitated the intervention of the physician. She thus spent the winter without a single headache, in a room in which the odor alone sufficed to reveal the existence of harmful emanations.

New Technic for Preparation of Diphtheria Toxin

The Ramon anatoxin, which has replaced the old serum of Roux and Behring for preventive vaccination against diphtheria, is recognized in France as possessing a more prolonged immunizing action, which extends over four years or more. The only disadvantage is the fact that it requires three punctures, at intervals of fifteen days, and physicians have a great deal of difficulty in inducing persons of limited education to decide in favor of this form of vaccination. Ramon has increased the potency of his anatoxin by preparing it with a more potent diphtheria toxin, which he injects into the horse. The old Martin technic for preparing this toxin, at the Institut Pasteur, consisted in inducing fermentation in a maceration of veal by keeping it in a hot-water oven for twenty hours at a temperature of 37 C. To this maceration, a solution of peptone free from dextrose is added. The potency of this toxin is such that it will cause the death of guinea-pigs in doses of from 0.0010 to 0.0014 cc., while its antigenic potency ranges between 10 and 12 units. By a modification of this method Ramon has secured a much more active toxin and a more effective serum and anatoxin. He tried first, in collaboration with A. Berthelot, an addition of a small amount of tapioca to the culture medium, which seems to facilitate the cultivation of the Klebs-Löffler bacillus. Roux announced to the Academy of Sciences the most recent technic and the new results that Ramon has obtained by adding to the culture medium a certain quantity of dextrose and macerating the meat in the cold. The potency of the toxin thus produced will cause the death of guinea-pigs in doses of $\frac{1}{1,200}$ to $\frac{1}{2,000}$ cc., and its antigenic potency is increased even to 25 or 30 units in certain samples. This simple modification in the mode of preparation provides a diphtheria toxin of high activity, and, at the same time, an anatoxin of high antigenic potency, capable of producing in man and animals a marked immunity. Furthermore, the anatoxin, the outcome of a medium in which the meat was macerated in the cold, makes it possible to avoid, in making injections of anatoxin, certain reactions due to toxic substances that traced their origin to the fermentation of the meat over the hot-water stove. This medium is also suitable, with some modification, for the preparation of tetanus toxin, the toxin of the scarlatinal streptococcus, and others.

CAPE TOWN

(From Our Regular Correspondent)

Feb. 21, 1930.

Medical Practice in South Africa

The new term of the medical schools of the Universities of Cape Town and Johannesburg opens early next month. The number of entrants to the profession is gradually increasing. With its comparatively small white population, South Africa is sometimes stated to be overcrowded with physicians, but a glance at the statistics does not bear out that contention. Last year the Union Medical Council published its first register, which under the new medical, dental and pharmacy act it is compelled to publish yearly. Unfortunately this first register is still incomplete, containing as it does the names of many men who are dead, who have left the country, and who are no longer in practice. Eliminating these, it seems that there is approximately one physician for every 5,000 patients in the union, a proportion which, in view of the fact that there is probably no dominion where health conditions are worse, is alarmingly low. The medical profession is not popular with South African students, and in proportion to the number of entrants for the teaching faculties, engineering, and agricultural science, the number of entrants in the medical faculty is not large. That is probably because the course is a six year term of travail, because the fees are high, and because the examinations are fairly severe and searching. Several students have abandoned their course here and gone overseas, returning as fully qualified physicians to find that their student contemporaries are still working for their final examination. Moreover, the reward that the medico obtains in the union is not proportionate to the time and the money spent on his education, especially when compared with the prizes in other professions. Private practice yields a modest competence in the cities; in the rural areas the medical practitioner has often to wait for his money, and in drought-stricken districts it is no rarity to find that all the local medico has to depend on is his monthly check from the government in payment of his services as district surgeon. Specialism is not yet understood; only in Cape Town is specialization at all strictly carried on, and the correspondence in the local medical journal shows that even there it is still much misunderstood. Recently a specialist group was formed within the Medical Association of South Africa.

Regulation of Medical Practice in the Union

A year ago, medical practice in the union was regulated by four different acts. Today these acts have been welded into one piece of legislation, the medical, dental and pharmacy act, which is administered by the minister of public health. It provides for the creation of a union medical council, composed partly of nominees and partly of representatives elected by the medical, dental and nursing professions. This council has the duty of controlling the registers, enforcing professional discipline, and generally safeguarding the public interest in all matters in which the profession is concerned. That the council has been established primarily in the interests of the public was conceded by the minister when he defended the act before parliament; and the presence of laymen on it, and the large number of government nominees, make it plain that public rather than professional interests are its first concern. It has drawn up regulations for the training and registration of nurses and midwives, and the ministers' department of public health has strongly recommended that some of these regulations be modified so as to abbreviate the period of training for nurses. This recommendation is directly in opposition to the frequently expressed opinion of the nurses' associations, and the nurses' representatives on the council have vigorously opposed it.

When the council was established, a number of members had to be elected by the medical profession, and the Medical Association of South Africa ran a "ticket" and succeeded in getting all its nominees except one elected, the unsuccessful one giving place to an old and well known member of the profession who ran in opposition to the ticket. The council is now, thanks to this action by the association, thoroughly in touch with associational views, and this cooperation undoubtedly tends to counteract the purely departmental influence. Unfortunately the council's powers under the act are limited, and it cannot therefore act as a professional court of appeal. It busies itself with complaints from the lay public, and recently it has had a good deal to do with accusations of overcharging by physicians. There is a special clause, inserted into the act with the approval of the association, to the effect that no physician is allowed to exact extortionate charges, and that every physician, if asked to do so by his patient, must state beforehand what fee he will charge for any operation or treatment. This clause is likely to lead to mischievous accusations, although it will undoubtedly tend to prevent overcharging by those who are out to exploit the public.

Medical practice in the union differs widely in urban and rural districts. In the former there is nowadays a certain measure of team work, while the physician has at his disposal

efficient laboratory, hospital and expert assistance. In the country, often far away from the railway, he has to act on his own responsibility and is expected to handle efficiently anything from a common cold to an extensive resection of gangrenous intestine. As a result he often undertakes things beyond his capacity, with the further result that medicine, and especially surgery, gets discredited with the lay public. Any one possessing a union medical degree, or a diploma or degree of any "reciprocating" country, can get on the register, but this principle of reciprocity is not logically applied, for South African students who have studied in countries that do not grant reciprocity may get on the register here provided their degree allows them to practice in the country of its origin. Ordinarily an Arts-eksamen diploma of Netherlands would not entitle its holder to practice here, as Netherlands does not grant reciprocity, but an Arts-eksamen obtained by a South African student in Netherlands would give the right to practice here though neither the M.D. of Groningen nor the M.D. of Utrecht or Amsterdam would give such a right, even to a native born holder. Similarly the M.D. Berlin or Freiburg would not enable a South African or a German student to practice here, but the South African could get on the register through his staats examen, while the German physician with his staats examen would still have to obtain an English diploma before he could practice in the union. In such cases applicants usually take the London Society of Apothecaries qualification, and there are several well known and well qualified specialists in the country who are on the register by virtue of this diploma.

Discussion of the Leprosy Policy

Our department of public health unfortunately publishes an annual report in which it sometimes discusses matters without expert knowledge. This year it discussed leprosy policy and caviled at the criticisms that have been directed against the antiquated segregation policy that it has obstinately refused to modify. Incidentally it attacked Sir Leonard Rogers and misquoted his views. Sir Leonard, who knows our conditions well, has now replied to these criticisms in a reasoned letter to the medical journal, in which he strongly urges that bacteriologic and not merely clinical evidence should be the criterion of infectivity in all leper cases. It is quite possible that leprosy is far more prevalent in the union than our department of public health imagines, and that cases are hidden simply because this policy of segregation frightens patients and prevents them from applying early for treatment. There are several leper asylums, whose annual cost of upkeep is high, but comparatively little is being done to investigate the disease scientifically. It has been suggested that such investigation should be undertaken by the department in conjunction with the universities, but heretofore the recommendations have been turned down. The union is singularly rich in material for public health investigation, but unfortunately the department has no expert with a sufficiently broad vision and outlook to organize such investigations. It does undertake investigations, but these carry little weight with either the profession or the public. Recently it reported on the incidence of endemic goiter, and from its report there is no evidence whatever that this disease is at all prevalent in the union. Nevertheless it issued a warning notice and urged the use of iodized salt, a recommendation that was promptly attacked in both the lay and the medical press.

Research in Parasitology

Excellent research work is, however, being done at the universities and at the Institute for Medical Research at Johannesburg. Among some of the subjects that have lately been reported on may be mentioned *Periplaneta americana* as a vector of hookworm disease and *Cordylobia anthropophaga* infection, both by Dr. Annie Porter of the institute; infection by a new species of schistosome, *Schistosoma mattheei*, by le Roux; investigation of the results of splenectomy, by de Kock, a worker in Aschoff's laboratory; research into native medicinal plants and therapeuticophysiologic work on the effects of drugs, by the pharamacologic departments of the University of Cape Town and the Witwatersrand, and investigations on the growth of South Africans (von der Westhuizen), on anthropological remains (Drennan and Dart) and on mosquitoes and malaria by the Research Institute. Excellent work is being done in pathology at the Onderstepoort Institute for Veterinary Research. Here the experiments on animals after splenectomy have opened quite a new avenue of research, and its relation to clinical work is not yet fully appreciated. De Kock has shown that after splenectomy in ruminants multiple nodules, resembling in structure a hemolymph gland, are formed in the liver; similar observations were recorded by Bittner as early as 1913, and it is now generally accepted that after splenectomy the reticulo-endothelial system takes on whatever functions may normally have been exercised by the spleen. Interesting observations have been made with regard to the immunity conferred against certain diseases in cattle by removal of the spleen, and the data so far accumulated show how fertile this region of research is.

It is undoubtedly in parasitology that research in South Africa has been productive of practical results that the lay public can appreciate. The work of Porter and Becker on bilharziasis has led to a more or less intensive campaign against this disease, which has had good results. Hookworm investigation, undertaken as early as 1916 in connection with the medical inspection of school children in the Transvaal, is still proceeding. So far it has not been proved that there is intensive or extensive infection; but the disease undoubtedly exists among the Shangaan and Bawenda tribes, which have not yet been examined, and valuable information could be gleaned by a systematic examination of all the native school children. At present there is no hope that this will be done, for the provincial government, under whose charge medical inspection falls, is chary of spending any of its money even on the examination of white children. It is still a common fallacy in the union that public health is essentially a matter of European health, and the community appears to forget that native ill health, as the natives outnumber the whites by six to one, is, so far as parasitic diseases are concerned, virtually the main source of all infection.

Annual Meeting of Medical Association

The third annual scientific meeting of the Medical Association of South Africa (British Medical Association), popularly known as the Medical Congress, will be held at Durban in July. An excellent program has been arranged and care has been taken that two sessions will be occupied by all the sections meeting for the discussion of subjects that have a general interest. One of the subjects chosen is the need for a native medical service; another is parasitology. The congress is not usually productive of papers of outstanding merit or discussions of absorbing interest, but it offers a good chance of focusing public attention on the work of the profession, and, through its annual public lecture, of educating the layman on health matters. At present there is ample need for such education. In the union parliament there are five medical men, one of whom, Dr. Karl Bremer, is regarded, by the profession and by the public alike, as an able and knowledgeable physician. In the provincial councils there are other medical men, but for the most part they are more interested in politics than in medical problems, and all of them are out of daily touch with their colleagues or with medical questions of the day. Recently an attempt has been made to form a medical group in parliament, and it is to be hoped that this movement, which has the cordial support of the medical members, will be a success. There are urgent and important political and social

problems before the country in the discussion of which the medical man, or at least scientific opinion, should take part. Among these are the native franchise bills, the insurance legislation, and the problem of white deterioration and degeneration, with which is intimately associated the question of immigration and white settlement.

BERLIN

(From Our Regular Correspondent)

Preventing Tuberculosis Among School Teachers

At a conference of the *reichsgesundheitsrat* held at the *reichsgesundheitsamt* (federal bureau of health) on the prevention of the spread of tuberculosis by the teaching personnel in schools, the following regulations were adopted, which the ministry of the interior has made known to the German states with the suggestion that they be applied:

1. All persons who intend to enter the teaching profession as teachers in public or private primary, middle or higher schools, or in occupational schools, or as assistant teachers, technical teachers, gymnasium teachers, athletic coaches, teachers for orthopedic instruction, teachers of deaf-mutes and the blind, kindergarten teachers and governesses must present a health certificate issued by a health official who is a physician, before they begin their course of training.

2. Before entering on his duties as a teacher, every applicant must present a second health certificate issued by an official physician; also on being transferred from a public to a private school. An examination by an official physician must likewise be made if, in case of frequent absence from school on the part of a teacher, especially in disorders of the respiratory organs, the school physician, health officer or school inspector, on account of suspected tuberculosis, makes a justifiable demand to that effect.

If the official physician, as set forth in paragraphs 1 and 2, considers, on the basis of his examination, that an examination by a specialist is necessary he shall have the authority to demand it. The greatest importance should be attached to the roentgenologic examination. There should be close cooperation with the tuberculosis welfare centers.

3. Neither teachers nor janitors, nor any other employees who come in contact with pupils, may be employed in a school if they are affected with pulmonary or laryngeal tuberculosis. In like manner, tuberculous pupils may not enter the schoolrooms.

Persons who have been affected with contagious tuberculosis may not be readmitted as teachers in a school unless they can present a health official's certificate showing that no danger from contagion exists.

The school physician must be informed of every case of contagious tuberculosis in a teacher or in any of the persons mentioned in paragraph 1 and of any person's readmission to any school.

4. Proper treatment of tuberculous teachers should be facilitated by the authorities.

5. The authorities in charge of schools must look after the hygienic arrangement and upkeep of school buildings, including any dwellings supplied to teachers. At definite intervals, they should be inspected.

6. All schools should be assured an adequate school physician service. Special importance should be attached to a thorough medical examination and to advice on the choice of a vocation on completion of a course in school.

Reform in the Schools

Radical school reformers would like to reorganize thoroughly our system of education. Moderate reforms, based on hygienic considerations, are recommended in a recent publication by Professor Grotjahn of Berlin, professor of social hygiene, and G. Junge, professor of pedagogy. A review of their publication, by Dr. G. Wolff of the Berlin public health service, is contained in the *Deutsche medizinische Wochenschrift*. The fundamental idea that pervades the book is a lightening of the school curriculum. The aim of the present methods appears to be to pour into a child's mind a mass of undigested knowledge, and this is at variance with the present conceptions of biology, which attach predominance to the inherited talents of the child in connection with all performances. The school should not force the child so much but should allow him more time and freedom to develop natural talents. There should be less memorizing of facts and more education by illustration and example, on the part of parents and teachers. Wolff thinks that most physicians and educators will concur in these principles, but it is difficult to carry them out; their application is hampered by deeply rooted habits of thought and also by practical considerations. Every one will agree that school for the younger children should not open before 9 o'clock; but many parents who go to work early find an earlier opening of the schools convenient. If the children are in school, they know they are taken care of. The number of study and recitation hours combined should not exceed four to five a day, and that is one of the most imperative demands of school hygiene. At present, frequently, instruction goes on uninterruptedly from 8 until 2 o'clock. Especially reprehensible is the common custom of having an hour for games or gymnastic exercises immediately following scientific instruction. This situation can be changed only by radical modification of the school program, with limitation to four or five hours of instruction. Another question that awakens much difference of opinion is the compulsory school age. That children should not enter school until they have completed their seventh year will hardly meet with general approval. The authors refer to the English schools, which have more and longer vacations, while Saturday is a full holiday. In England children are compelled to enter school on completion of the fifth year, a year earlier than in Germany, though the first instruction is more like that of the kindergarten. If, as some demand, the period of compulsory school attendance is to be extended, the children would get out into practical life much later, in case admission to the primary grades should be postponed a whole year. The question of one long vacation, or the extension of the summer vacation to three months, awakens much controversy from the standpoint of school hygiene. From Christmas up to the summer vacation is an exceedingly long period without a vacation. It is possible that more frequent interruptions of school attendance present as great advantages as one single long vacation. The suggestion that the number of pupils in a class should be less than at present, the number being limited, if possible, to twenty-five, will meet approval on sanitary and educational grounds; also that the amount of instruction be reduced. Much superfluous ballast should be eliminated. Many of the problems in equations and geometric construction in widely used textbooks are merely puzzles without educational value. A reform in the direction of the needs of practical life is indicated, the authors say. More particularly, school instruction must be restricted from the quantitative side and the quality improved. Our youth cannot develop with the proper freedom if the greater part of the day is spent in school and in poring over books during the evening.

Marriages

JOHN O. PROSSER, Hollidaysburg, Pa., to Miss Marguerite Alexander of Westmont, Pa., January 29.

HOWARD P. SLOAN, Bloomington, Ill., to Miss Esther Marie Olsen of Pasadena, Calif., March 1.

LOUIS T. LAVY to Miss Belle Rubenstein, both of Baltimore, March 3.

Deaths

Ralph S. Porter ✠ Lieut. Colonel, M. C., U. S. Army; Baltimore; Rush Medical College, Chicago, 1897; Northwestern University Medical School, Chicago, 1898; veteran of the Spanish-American War; entered the regular army in 1903 as an assistant surgeon and was promoted through the various grades to that of colonel in 1929; graduated from the Army War College in 1922 and the Army School of the Line in 1920; member of the American College of Surgeons; aged 54; died, March 21, at the Walter Reed General Hospital, Washington, D. C.

James Irvin Johnston ✠ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1893; member of the American College of Physicians; president of the Allegheny County Medical Society; assistant professor of medicine, University of Pittsburgh School of Medicine; on the staff of the Mercy Hospital; aged 62; died, February 8, of heart disease, arteriosclerosis and coronary occlusion.

Fred Le Maitre Grasett, Toronto, Ont., Canada; University of Edinburgh Faculty of Medicine, Edinburgh, Scotland, 1873; professor emeritus at the University of Toronto Faculty of Medicine; past president of the Canadian Medical Association; formerly on the staff of the Toronto General Hospital; aged 78; died, February 16.

Charles T. Hibbett ✠ Medical Director, Captain, U. S. Navy, retired, Nashville, Tenn.; University of Virginia Department of Medicine, Charlottesville, 1874; entered the navy in 1875, was made a medical director in 1910 and was retired in 1913; aged 78; died, March 14, of cerebral hemorrhage.

James Renwick Guthrie ✠ Dubuque, Iowa; State University of Iowa College of Medicine, Iowa City, 1884; member of the American College of Surgeons; emeritus dean and emeritus professor of obstetrics at his alma mater; aged 70; died, March 13, of septicemia and bronchopneumonia.

William Stanton Winter, Jr., Port Arthur, Texas; Kansas Medical College, Topeka, 1908; member of the State Medical Association of Texas; formerly acting assistant surgeon, U. S. Public Health Service; aged 43; died, March 3, of acute dilatation of the heart.

Frank Clark Granger, Randolph, Mass.; University of Vermont College of Medicine, Burlington, 1877; Dartmouth Medical School, Hanover, N. H., 1881; member of the Massachusetts Medical Society; aged 80; died, Dec. 22, 1929, in New Rochelle, N. Y.

Lyle Battey West ✠ Chattanooga, Tenn.; University of Pennsylvania School of Medicine, Philadelphia, 1921; on the staff of the Chattanooga Hospital; aged 36; died, February 24, in a hospital at Marietta, Ga., of injuries received in an airplane accident.

Sanford John Ferris ✠ Newark, N. J.; Yale University School of Medicine, New Haven, 1897; past president of the Essex County Medical Society; on the staff of St. Mary's Hospital, Orange; aged 56; died, February 16, of Hodgkin's disease.

George Henry Stanger ✠ Boone, Iowa; College of Physicians and Surgeons, Chicago, 1892; past president and secretary of the Boone County Medical Society; on the staff of the Eleanor Moore Hospital; aged 64; died, February 18, of heart disease.

William J. Eddy, Shelbyville, Ill.; College of Physicians and Surgeons, Chicago, 1885; past president of the Shelby County Medical Society; formerly mayor of Shelbyville; aged 72; died, March 17, in Los Angeles, of gastric hemorrhage.

Francis M. Rich ✠ Buffalo; Eclectic Medical College of the City of New York, 1872; Bellevue Hospital Medical College, New York, 1885; on the staff of the Millard Fillmore Hospital; aged 83; died, February 13, of pneumonia.

Ilo Robert Aikin, Oakland, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1898; member of the California Medical Association; aged 53; died, Dec. 10, 1929, of arteriosclerosis and acute dilatation of the heart.

Walter Philip Dickinson, Lakeland, Fla.; Medical College of Alabama, Mobile, 1903; member of the Florida Medical Association; served during the World War; aged 50; died, February 7, at Oteen, N. C., of tuberculosis.

Joseph I. Woisard ✠ Bristol, Conn.; Georgetown University School of Medicine, Washington, D. C., 1909; served during the World War; formerly health officer; aged 44; died, March 4, at St. Francis Hospital, Hartford.

Edward Vernon Silver ✠ New York; Medical Department of Columbia College, New York, 1885; member of the American College of Physicians; aged 69; died, March 5, of cerebral hemorrhage and arteriosclerosis.

Arend Vander Veen, Grand Haven, Mich.; Medical College of Alabama, Mobile, Ala., 1886; member of the Michigan State Medical Society; Civil War veteran; aged 89; died, March 14, of injuries received in a fall.

Edgar H. Little, East St. Louis, Ill.; Marion-Sims College of Medicine, St. Louis, 1900; member of the Illinois State Medical Society; formerly postmaster of East St. Louis; aged 57; died, March 1, of heart disease.

Edward N. Simpson ✠ Covington, Ky.; Medical College of Ohio, Cincinnati, 1893; aged 71; died, February 28, at the Good Samaritan Hospital, Cincinnati, of myocarditis and hypertrophy of the prostate.

Joseph Ward Russell, Nashville, Tenn.; Meharry Medical College, Nashville, 1911; formerly professor of anesthesia at his alma mater; aged 42; died, March 16, of cerebral hemorrhage and chronic nephritis.

James Robert Wallis, Clinton, Mo.; St. Louis Medical College, 1882; member of the Missouri State Medical Association; aged 70; died, January 29, in a hospital in Washington, of cirrhosis of the liver.

William E. Hayes ✠ Frankfort, N. Y.; Medical Department of the University of the City of New York, 1891; formerly county coroner; aged 62; died, January 30, at the Faxton Hospital, Utica, of uremia.

John Edward Lounsbery Davis, New York; New York Homeopathic Medical College, 1877; formerly on the staff of the Hahnemann Hospital; aged 79; died, March 10, in Atlantic City, N. J., of pneumonia.

Samuel Richard Harover, Maysville, Ky.; Jefferson Medical College of Philadelphia, 1893; member of the Kentucky State Medical Association; aged 62; was found dead, in March, of cerebral hemorrhage.

Robert A. Lively, Durant, Okla.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; member of the Oklahoma State Medical Association; aged 82; died, February 21, of organic heart disease.

Claud E. Standlee, Long Beach, Calif.; University of Southern California College of Medicine, Los Angeles, 1907; aged 44; died, Dec. 12, 1929, at the Community Hospital, of cerebral hemorrhage.

John B. Cargen, Cambridge, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; aged 80; died, March 3, in the Madison General Hospital, Madison, following an operation for hernia.

Walter Erwin Smith, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1924; served during the World War; aged 35; was killed, March 4, in an automobile accident.

James Monroe Fry, Shenandoah, Ohio; College of Physicians and Surgeons, Keokuk, Iowa, 1882; aged 75; died, February 8, at the Mansfield (Ohio) Hospital of cerebral hemorrhage.

Frederick Nicolas Sauer, Milwaukee; Keokuk (Iowa) Medical College, 1892; formerly deputy health commissioner; aged 64; died, February 15, of streptococcic infection and erysipelas.

Isaac Newton Miller, Kansas City, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; aged 72; died, March 4, at St. Joseph's Hospital, of angina pectoris.

Edward Joseph Corcoran, Northville, Mich.; University of Vermont College of Medicine, Burlington, 1922; aged 31; died, Dec. 17, 1929, in New York, of heart disease.

Lyman Dow, Washington, D. C.; Medical College of Ohio, Cincinnati, 1865; Civil War veteran; aged 86; died, Dec. 29, 1929, of myocarditis and bronchopneumonia.

Daniel Plummer Cilley ✠ Southbridge, Mass.; University of Vermont College of Medicine, Burlington, 1885; aged 75; died, January 22, of pneumonia.

Gay Dorn, Chicago; Chicago Medical College, 1883; aged 75; died, March 22, probably of angina pectoris and arteriosclerosis.

David B. Buhler ✠ Pretty Prairie, Kan.; Kansas City Medical College, 1904; aged 50; died, January 25.

John W. Lovan ✠ Hebron, Mo. (licensed, Missouri, 1899); aged 76; died, January 25.

✠ Indicates "Fellow" of the American Medical Association.

Bureau of Investigation

COLLECTION AGENCIES

Be Sure You Understand the Contract

During the past few years a large number of complaints have come from physicians regarding their experiences with various collection agencies. Wherever possible, the Bureau of Investigation has taken up these complaints in detail and attempted to get some adjustment between the physician and the agency complained about. A careful and impartial study of the complaints submitted by physicians and the excuses made by the collection concerns has led to certain conclusions, which, it is believed, fairly sum up the situation. These are:

1.—*The contracts of many collection agencies are not clear.* They are verbose, vague and so worded as to confuse or mislead the physician.

2.—*Many contracts are inequitable.* They are drawn almost wholly in the interests of the agency rather than equally in the interests of both agency and client.

3.—*The contracts are not understood.* Many physicians sign these contracts without any clear understanding of the issues involved.

4.—*Some physicians ignore the contract requirements.* Because of this lack of understanding, physicians often fail to comply with some of the technical requirements of the contracts they have signed.

5.—*Owners of agencies, tricky and hard-boiled.* Many collection concerns that solicit physicians' accounts are run by hard-boiled individuals, who know the law, carefully keep within its letter and persistently violate its spirit.

6.—*Many solicitors dishonest.* The traveling representatives of many agencies obtain accounts by verbal misrepresentations, which the agencies repudiate, because they are not part of the written contract.

The number of complaints from physicians regarding their experiences with collection agencies has reached the point where a summary of them seems desirable. Most collection agencies obtain physicians' accounts through traveling solicitors. From the reports that have come in to us it seems that these solicitors are not at all hampered by facts and seldom let truth cramp their style. They explain glibly that the company they represent does business on a "no collection-no charges" basis. Frequently physicians have been inveigled into signing contracts without having been remotely conscious of so doing. They have been persuaded to put their names on the large sheet of paper bearing the name of the collection agency at its head and below which are lines on which to place the names and addresses of debtors. The physicians have failed to notice that in putting their names to these sheets, they have legally assigned to the collection agency the claims listed and, at the same time, have contracted to do certain things which come as a great surprise to them, later, when the agency calls their attention to it.

The usual contract of the tricky collection agency reads something like this:

> The agency is to receive fifty per cent on the first $100 collected and on all collections made on outlawed claims, or on instalment collections, or through its legal system.
>
> It is to get thirty-five per cent (sometimes twenty-five per cent, sometimes ten per cent) on all other collections.
>
> Commission is charged on all accounts collected, withdrawn, or ordered dropped during process of collection.
>
> A docket fee of fifty cents is charged for office filing.
>
> Commissions are to be paid (to the agency) as collections are made, whether payments are made to the agency or to the physician, and the physician agrees to report promptly all payments and immediately remit all money due the agency.
>
> Failure to furnish evidence of indebtedness on request is to be considered as instructions to drop.
>
> No agent has authority to alter this agreement verbally or in writing.

These represent fairly the essential elements in the contracts issued by a number of collection agencies. Their one-sidedness becomes apparent when studied. The first paragraph makes it in the interests of the agency to attempt to get an instalment on a given debt rather than a full payment, thereby obtaining the maximum commission instead of the minimum. The paragraph stating that commission is charged on all accounts withdrawn or ordered dropped constitutes an inducement for the agency to create ill-will on the part of the debtor, so that the physician will ask the company to stop work on the accounts. When he does so, he immediately becomes liable for a commission equal to one-half the face value of the account dropped.

The paragraph that requires the physician to notify the agency and send it its commission on the day that he receives any money direct from the debtor is especially one-sided, because nowhere does the agency bind itself to remit with equal promptness the payments (less commission) that have been paid to it. The result of this one-sided arrangement is that various collection agencies over the country continue to hold on to money that must aggregate up in the millions, while the physician is "stalled off" with one excuse or another—or, more frequently, without any excuse—the agency ignoring the physician's request for a settlement. Just how some physicians have been treated by collection agencies of the type that this article deals with will be made clear from the reports that follow:

CASE I.—Dr. T. turned over to a Chicago collection agency six accounts totaling more than $300. The doctor received no payments direct on any of these accounts. Some nine months after turning over the accounts the physician learned that one of the debtors, Mr. X, some seven months previously had paid the agency $20 of a total amount owed of $25. The agency had made no report of this to Dr. T., nor had they sent him his payment. The doctor then wrote a protest to the agency, asking for a report of all monies collected. He finally got such a report eleven months after turning over the accounts. At that time the company admitted that it had collected $20 from Mr. X, and Dr. T. was asked to send in a complete report of all payments that had been made direct to him. The doctor replied immediately, stating that he had received no money, direct or indirect, on any of the accounts listed and he asked that his share of the $20 that had been collected be sent. Two weeks later the agency sent Dr. T. a check for $4.50! Its method of arriving at this figure was as follows: It first charged that Mr. X had paid $5 to Dr. T. direct (which was false); they had collected $20 themselves. By this system they concluded that $25 had been collected, of which the agency was entitled to fifty per cent, or $12.50. It was also entitled, according to the contract, to an office filing fee of fifty cents on each of the six accounts listed. This came to $3, so that there was a total of $15.50 due the company out of the total collection of $20, leaving $4.50 for the doctor! This so disgusted Dr. T. that he notified the agency immediately to discontinue any further efforts. This was just twelve months after the accounts had been turned over to the agency. The agency waited another seven months and then sent the doctor a form-letter relative to the largest account listed (one for $155) and asked that he send a complete itemized statement on this particular account. This, it is to be remembered, was after the agency had had the account nineteen months! Dr. T. again referred the agency to his letter, in which he requested them to discontinue any further efforts and to close the contract. The company immediately came back with the statement that, as the six accounts had been assigned to it for an indefinite period "under an agreement which we hold in our possession, properly signed and executed," it would be necessary for the doctor to pay the agency fifty per cent of the face value of the balance of the accounts, or those that he wished withdrawn!

CASE II.—A solicitor for a Chicago agency called on Dr. B. around the noon hour and the doctor made an appointment with the solicitor for the afternoon. The agent came back before the time set, while the doctor was at luncheon, and told the office girl that he had been given permission to look over the accounts—which was false. The solicitor left with a considerable list. As soon as Dr. B. learned the facts, he telegraphed to Chicago to tell them that he had signed no contract. In a few days, however, the regular dunning letters were being sent to the different individuals on the list that the solicitor had taken. Dr. B. then sent a registered letter to the agency,

explaining the thing and telling them to stop. The letter was never acknowledged. He finally went to Chicago and demanded to see on what authority they were collecting his accounts. He was shown a contract to which his name had been forged. The agency continued the work. Dr. B. wrote several letters demanding his accounts back, and unwisely—but not unnaturally—in order to conclude a nasty business, offered to take half of the amount that they had collected and allow them to keep the other half. The company's answer was a formal request on the doctor for a balance of $269.16. According to the agency's figures, they had collected $369.55, while Dr. B. had received direct $238.50, making a total collected of $608.05. This did the doctor little good, as the agency put in a bill as follows:

50 per cent on the first $100	$ 50.00
50 per cent on legal system	46.50
50 per cent on instalment payments	207.15
25 per cent on balance	.18
Charges on accounts withdrawn	333.75
Office filing fee on 145 accounts at 50 cents	72.50

Thus the collection agency figured that there was $710.08 due it, of which it had in hand $369.55, and that it was necessary for Dr. B. to send them $269.16 in order to close the account. This would have been more than $30 over and above what Dr. B. had collected direct! In other words, the agency after having had for about a year 145 accounts—all fraudulently obtained—would receive $710.08, while the doctor to whom these accounts were owing would be $30 out of pocket! The upshot of this case was, after the contract had been proven a forgery, that the agency modified its demands, and Dr. B. finally got a check from them of $182.15 and the account was closed!

CASE III.—Dr. M. turned over to another Chicago agency certain accounts for collection. Three of the debtors listed paid amounts, aggregating $9, directly to the doctor and these collections were reported in accordance with the contract. One debtor, who was owing $20, falsely notified the agency that he had paid that sum to Dr. M. The agency then made a demand on the doctor for $11.63 as commission, which, of course, the doctor refused to pay. As a result of this refusal, he received a letter from an individual who signed himself "attorney" for the agency. The letter read:

"I spend very little time fooling with contract violators—especially when it is a written contract duly signed by a financially responsible party.

"Let your financial ability to satisfy a judgment for damages and costs, for breach of contract, rather than your 'feeling' be your guide in this case. If you do not care how you throw away your funds, just withhold the $11.63 commission due my clients for another three days.

"I draw your attention to the terms of the contract which you signed, embodied in the enclosed copy—so arranged that it positively cannot be misunderstood. Notice that you do not 'own' all of the proceeds from these accounts. You 'assigned' them to my clients. Further, you failed to 'report promptly' and 'immediately remit.' You are thus in violation of your contract. You cannot now evade responsibility by claiming you had no knowledge of the facts. You are hereby put upon notice.

"On behalf of the assignee I hereby demand that you pay over forthwith their legal share of these funds, amounting to $11.63, which you are now retaining for your own sole use.

"Fail to heed this notice and demand at your peril."

This gem of polite correspondence failing to get a rise out of the doctor brought another letter from the same individual, two weeks later. This read:

"State your intentions regarding the payment of $11.63 due my clients as their share of the collections you now retain and refuse to account and settle for.

"Are you going to send them your check for $11.63 or not?

"Answer YES or NO.

"And answer mighty quick, or I'll answer for you, in a court right there in your own county.

"I draw your attention to my last letter wherein I put you on notice that my clients' equity in these funds demanded that you pay over same forthwith.

"Your continued retention for more than 24 hours will be offered in evidence against you.

"Final demand that you immediately remit $11.63 to my clients is hereby served upon you."

The three cases detailed are not exceptional in the experiences that have been reported by physicians to the Bureau of Investigation. The type of collection agency that has been dealt with in this article can be forced into decent methods of business—at least in so far as the medical profession is concerned—if physicians will take the pains to read the written contracts that these concerns have carefully before signing them. If the meaning of the contract does not seem to be entirely clear, it should be submitted to a local attorney of standing for his opinion. The physician will be money in pocket.

Do not sign any contract that does not state specifically that the agency obligates itself to notify the physician at least once a month of the amounts collected by it, for all agencies require the physician to notify them *immediately* on receipt of any money that has been collected direct. Insist on a time clause for the returning of accounts. Most important of all, *read* and *understand* the contract!

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PREPARATION OF EXTRACTS FOR SKIN SENSITIZATION TESTS

To the Editor:—I have a patient, 35 years old, whom I have tested with three kinds of dust—one from his office, one from his mill and one from his home. He is sensitive to all three of these dusts. Will you kindly tell me how an extract may be prepared which can be used to desensitize him, and what dosage it is to be given in and how often? Please omit name.

M.D., Macon, Ga.

ANSWER.—A concentrated extract of dust is prepared by extracting with a neutral or slightly alkaline isotonic salt solution containing 0.5 per cent phenol as antiseptic, or using Coca's extracting solution. The extract is sterilized by filtration and sterile dilutions of varying degrees are prepared, the original extracting fluid being used as a diluent. These sterile solutions are then used for testing and the initial dosage is best determined by reactions obtained by testing with the various dilutions of the dust antigen with which the patient is to be treated. Usually the first treatment consists of 0.1 cc. of that dilution next higher than the one that gave a positive reaction; in other words, the first dose is 0.1 cc. of the strongest dilution that failed to give any reaction whatever, no matter how slight. Then the dosage is increased at intervals of from five to seven days until the patient is densensitized.

DIPHTHERIA ANTITOXIN — ETIOLOGY OF COLDS

To the Editor:—1. A girl, aged 10 years, with laryngeal diphtheria is given 30,000 units of antitoxin. After six weeks all signs and symptoms, except a positive nasal culture, have disappeared. What period of time shall have elapsed before this patient is to be considered a carrier? 2. Does diphtheria antitoxin only neutralize the toxin or does it also have an inhibitory effect on the growth of the organism? 3. What is the currently accepted idea as to the etiologic agent in the common head cold? Is there any virtue in the polyvalent vaccines for acute colds? Please omit name.

M.D., North Carolina.

ANSWER.—1. Any person who yields diphtheria bacilli in cultures from the throat or nose or any other part of the body, and who exhibits no signs of diphtheria, is properly called a "carrier."

2. Diphtheria antitoxin neutralizes diphtheria toxin but has no effect on the bacilli.

3. None of the organisms currently described as having an etiologic relationship to the common cold have been accepted by scientists generally as established. The vast majority of medical opinion tends to the view that there is little virtue in the use of polyvalent vaccines for either the prevention or the cure of colds.

INTRA-OCULAR PRESSURE AND CHOKED DISK

To the Editor:—Would you please briefly explain the anatomic-physiologic reasons for the fact that, of a pair of eyes, the one exhibiting the most choking of its disk invariably also exhibits the least intra-ocular tension, which occurs, for example, in an intracranial tumor of unilateral position and results in choking of the optic disk with intra-ocular tension below normal on the side affected. Please omit name.

M.D., Michigan.

ANSWER.—In this question the cart is before the horse, for the eye that exhibits the greater choking of the disk is the one that had the lower initial intra-ocular tension. The disk cannot be choked if the intra-ocular pressure is greater than the pressure of the cerebrospinal fluid in the intravaginal sheaths of the optic nerve (see Bordley's discussion of Parker's paper). The

probability is that when the choking is greater in one eye than in the other there was a difference in intra-ocular pressure before the choking began and that the eye with the lowest tension showed the greater degree of choking. (Parker, W. R.: The Relation of Choked Disk to the Tension of the Eyeball, THE JOURNAL, Oct. 7, 1916, p. 1053). Twenty or more years ago, Horsley asserted that in unilateral brain tumor the choking of the disk was greater on the affected side, sufficiently so to be considered diagnostic. But this has been disproved by Gowers and others.

"SUN CHOLERA MIXTURE"

To the Editor:—Would you please publish in THE JOURNAL a history of the "Sun Cholera Mixture." I know that the recipe was published in the New York *Sun*, and believe it was also called the Seventy-First Regiment Cholera Mixture and was used during the Spanish-American War. It is described in the National Formulary under the name of compound mixture of opium and rhubarb.

J. M. LOBSENZ, M.D., New York.

ANSWER.—During the cholera excitement in New York in June, 1849, a physician by the name of G. W. Busteed sent a recipe for the disease to the editor of the New York *Sun*. It was printed, and was so successful in the relief, at least, of the symptoms that it came to be popularly known as the Sun Cholera Mixture and was admitted to the first edition of the National Formulary in 1883 and in subsequent editions under that name. In 1892 an article appeared in the New York *Sun* relating the facts of its origin.

The original formula called for:

Tincture of opium.
Tincture of rhubarb.
Tincture of capsicum.
Spirit of camphor.
Essence of peppermint.
Mix well in equal parts.

Dose: Fifteen to thirty drops in water, to be repeated in fifteen minutes if necessary.

The formula was modified somewhat later on account of the changing strength of some of these official preparations in later editions of the Pharmacopeia.

In addition to the use of the remedy, Dr. Busteed rubbed the bodies of the sufferers with hartshorn liniment and specified a strict diet.

TRAUMA AS CAUSE OF NEOPLASM

To the Editor:—A man, aged 38, slipped and fell against a bale of rubber and developed, one week later, several enlarged glands on the outer chest wall, palpable just beneath the skin. A pathologist states that histologic examination of one gland, removed from the left chest wall, shows no evidence of a malignant condition but a reactive process with the presence of foreign body giant cells. His diagnosis is xanthoma multiplex. A roentgenogram of the chest showed a dense shadow along the right hilus parallel with the heart shadow, of nontuberculous origin. The roentgenogram of the bones and other structures is negative. There have been no constitutional symptoms. The Wassermann reaction is negative and there is no evidence of syphilis; likewise, no clinical evidence of tuberculosis or Hodgkin's disease. Would it be possible for trauma to cause this type of tumor on the chest wall?

F. W. RICE, M.D., Morristown, N. J.

ANSWER.—It is not to be imagined that any form of multiple neoplasms of visible size could develop within a period of one week after a trauma. If the diagnosis of xanthoma multiplex is correct the probability of a causal relation of the trauma for the nodules can be excluded, as this condition usually develops slowly. Apparently this is one of the cases in which a trauma has called attention to conditions previously present but not recognized, on the assumption that the history is correct as stated in the inquiry.

PREVENTIVE ACTION OF EPINEPHRINE ON ANAPHYLACTIC SHOCK

To the Editor:—It has been found that epinephrine is effective in combating the symptoms of serum hypersensitiveness. Is it possible to prevent these symptoms by injecting a mixture of epinephrine and serum? Would a sensitized guinea-pig be protected against a toxic dose of serum if epinephrine was simultaneously injected?

H. A. ALTMAN, M.D., Astoria, L. I.

ANSWER.—The first question cannot be answered definitely because no precise experiments or observations have been made to determine the results of injecting a mixture of epinephrine and serum in human beings. In sensitized guinea-pigs, Hanzlik and Karsner (*J. Pharmacol. & Exper. Therap.* **14**:425 [Jan.] 1920) were successful in at least two cases in preventing or escaping anaphylactic shock on simultaneous intravenous injection of serum and epinephrine. To determine questions like these is difficult because the conditions are complex and subject to marked variation in the individual patient or animal.

TREATMENT OF DEMENTIA PARALYTICA

To the Editor:—I am treating a patient with early dementia paralytica. Last year he had thirty intramuscular doses of corrosive mercuric chloride, one-fourth grain (16 mg.) each, about a hundred mercury inunctions, ten doses of neoarsphenamine, 0.6 Gm., ten doses of sulpharsphenamine and ten doses of bismuth arsphenamine sulphonate. He has had large doses of potassium iodide at varying intervals during the time. The last of the year he had twenty doses of typhoid vaccine intravenously, securing a distinct fever reaction from every dose. He has shown marked clinical improvement; his spinal fluid has always been negative but his blood is persistently strongly positive and after a month's rest period he is beginning to show signs of regression. I have started him on 1 Gm. doses of tryparsamide at weekly intervals; I have also started the mercury and iodides again. Please outline a definite form of treatment to follow during this year and also comment on the persistently positive blood observations. Please omit name.

M.D., South Carolina.

ANSWER.—It is not infrequent to find that blood and spinal fluid Wassermann reactions remain positive long after clinical improvement has been obtained, and it is not unusual, in spite of vigorous treatment, that a relapse occurs. The patient with dementia paralytica who presents the clinical picture of a gradual mental deterioration is more apt to have at the basis of his disease a degenerative parenchymatous change. It is well known now that the good results from therapy of any form in dementia paralytica are obtained from the more emotionally disturbed case which pathologically presents much mesodermal infiltration. In fever therapy a good stiff rise must be obtained, as high as to 104 or 105 F.

For the patient described, it would be well to give 3 Gm. doses of tryparsamide at weekly intervals, carefully controlling the medications by frequent examination of the optic disks. Eight or ten injections at weekly intervals should be given, followed by rest of a month or two. It might be well to repeat the fever therapy with a dozen chills during the course of the year. If a remission does not ensue with this treatment and the previous treatment that he has had, one might well say that this is an intractable case.

USE OF IMMUNIZING DOSES OF DIPHTHERIA ANTITOXIN

To the Editor:—In THE JOURNAL, January 11, p. 126, appears a question on the use of diphtheria antitoxin as a prophylactic. Your answer was as follows: "If the child can be carefully watched, it would be best to make cultures for diphtheria bacilli, and defer giving antitoxin until signs of diphtheria appear." I would like a more detailed explanation of why you do not advise the giving of 1,000 units as a prophylactic to contacts of a diphtheria case. Your answer is rather out of line with what I learned at Rush and what is being practiced and preached in this state (Alabama). Please omit name.

M.D., Alabama.

ANSWER.—The reasons for not giving doses of diphtheria antitoxin to contacts are: 1. The contact may be immune and not need antitoxin. This may be determined by a Schick test. 2. The contact may not be infected. This may be determined by cultures. Serum reactions, disagreeable if not dangerous, may follow immunizing doses of serum. The immunizing dose produces only transient protection but may render the individual hypersensitive to horse serum, so that severe reactions may follow later administration of any therapeutic horse serum.

TREATMENT OF SYPHILIS

To the Editor:—A man, aged 30, had a chancre in June, 1927. A dark smear gave a negative result and so it was not until the secondary rash appeared that treatment was instituted. Before he came to me he received nine injections of neoarsphenamine and sixteen of mercury in twenty-five weeks; the Wassermann reaction was negative. Six weeks later the Wassermann reaction was positive. Also, twenty-two injections of bismuth compounds were given in twenty-two weeks; the Wassermann reaction was negative. Ten weeks later the Wassermann reaction was positive. Then sixteen mercury injections were given; the Wassermann reaction was negative. Eight weeks later, in January, 1929, the Wassermann reaction was two plus; he then came to my office. He told me that mercury made him very sick and so I gave him a course of treatment consisting of six injections of neoarsphenamine and eighteen of bismuth preparations. The Wassermann reaction was negative after treatment. Six weeks later the Wassermann reaction was still negative but I gave him an intensive course of treatment consisting of eight injections of silver arsphenamine and ten of bismuth compounds. Ten weeks later his Wassermann reaction was negative and six weeks after that it was still negative. Before he came to me, travel necessitated a certain amount of irregularity and changing of treatment. The patient is intelligent and wants to know what the chances are of his being permanently cured. He is ready to take more treatment. Can you help me to be reasonably fair and honest with him by giving your advice in the matter? Please omit name.

M.D., New York.

ANSWER.—The patient's treatment was not begun until the secondary stage was well established. He also was given too long a rest after the first course, allowing a relapse. The same

thing happened after the second and third courses. He therefore needs longer treatment than one whose course has been smooth. His treatment should be continued, with careful clinical and serologic watching, the rest interval being gradually increased if the Wassermann reaction remains negative. After the first six months' rest interval the spinal fluid should be examined, if it has not been examined earlier. If all tests and examinations are negative, one course of treatment a year should be given for several years and after that the patient carefully watched for clinical or serologic signs of recurrence for at least twelve years, fifteen years after the onset.

TECHNIC OF THE PIAZZA TEST

To the Editor:—Please inform me where I can get the technic of the Piazza test used by Franco in urine of tuberculous persons.

S. B. HOOD, Youngstown, Ohio.

ANSWER.—The Piazza test, as reported by A. Franco in the *Rivista di patolgia e clinica della Tuberculosi* **10**:849, is performed with serum obtained by immunizing a rabbit (about 1,500 Gm.) with old tuberculin of Koch, and freshly obtained urine, sterile if possible, from which a clear filtrate is obtained.

Four injections of tuberculin are made into the guinea-pig by the peritoneal route, at intervals of ten days: The first consists of 2 cc., the second of 4 cc., the third of 6 cc. and the fourth of 10 cc. Fifteen days after the fourth injection, blood is taken from the animal. The serum is kept sterile and is not inactivated.

The test is performed on 5 cc. of clear urine, contained in a sterile test tube, to which is added 0.5 cc. of immune serum obtained in the manner described (test tube A). Another test tube (B), containing 5 cc. of urine, serves as a control. The two test tubes are kept at 37 C. for twenty-four hours.

The reaction appears in two phases: the precipitating phase and the lytic phase. The first is observed immediately after the test tubes are taken from the thermostat. In test tube A, if the urine is taken from a tuberculous subject, a precipitate occurs which varies in intensity from a light granular layer, deposited on the walls and bottom of the test tube, to a precipitate of considerable amount; the result of this first phase should be considered positive when the precipitate is encountered only in test tube A and not in the control tube, or if the precipitate in test tube A is greater than that encountered in the control tube.

The second phase of the reaction, or the lytic phase, appears with the biuret reaction. After the reading of the first phase, the liquid in the tubes is filtered, and the filtrate is stratified above an alkaline solution of copper sulphate. The tubes are placed in the thermostat for thirty minutes, and the results are then observed. The positive biuret reaction occurs in the tubes in which the antituberculin serum has been added to urine obtained from tuberculous persons.

The complete result of the reaction should be determined on the basis of the result of both the precipitating and the lytic phases, because these are not parallel but appear independently.

COROZONE

To the Editor:—I have been canvassed to buy a device called corozone, which is advertised in the *Saturday Evening Post*. The device appears to be an ozone generator, and I think the claims for it are exceedingly extravagant. Would ozone combine in any way with carbon dioxide to make it suitable for reinhalation? Is ozone, if breathed or taken into the lungs, capable of combining with the carbon to form carbon dioxide and serve the same purpose as atmospheric air? Has it any especial value as a purifier of atmospheric air? Would ozone in sufficient concentration to be germicidal be suitable for ordinary breathing? Please omit name.

M.D., Ridgway, Pa.

ANSWER.—The Corozone unit referred to is a small portable ozonator which can be operated on the ordinary electric light circuit.

Ozone does not combine with carbon dioxide and could not make it suitable for reinhalation. Ozone is an unstable substance and it is doubtful whether any oxygen in the form of ozone would actually reach the blood. Ozone in large quantities has an irritating effect on the mucous membranes, but in small amounts, such as have been found necessary to use in attempting to purify air, probably has no physiologic action; but individuals appear to vary considerably in their reaction to this substance. How much of this reaction is physiologic and how much is psychic it is difficult to determine. Ozone in sufficient concentration to kill bacteria is not suitable for ordinary respiration because of its irritant action.

Ozone cannot be used as a substitute for good ventilation in a room any more than deodorants or perfumes can be used as a substitute for bathing the body. Certain odors appear to be destroyed when ozonated air is produced in their presence, but this is probably due to the fact that the gas covers up the other odors.

As stated in a Query and Minor Note on "Ozone and Ventilation" (THE JOURNAL, June 29, 1929, p. 2186) there has been no sound scientific work brought forward to show that there is any place whatever for ozone in problems of ventilation; on the contrary, E. O. Jordan and A. J. Carlson reported that the available evidence demonstrated the lack of hygienic value of ozone in room ventilation. Their experiments show that ozone has no place as a practical room disinfectant because it is not bactericidal in concentrations which can be borne by man; that in concentrations which can obtain in practical ventilation ozone is not a deodorizer and the masking of odors which it may effect is undesirable; that the inhalation of even small amounts of ozone is harmful, and that as a therapeutic agent the gas is valueless if not injurious (THE JOURNAL, Sept. 27, 1913, p. 1007).

POSSIBLE HEREDITARY CHARACTER OF ENLARGED THYMUS

To the Editor:—An obstetric patient (a secundipara) is apprehensive lest she give birth to children with enlarged thymus glands. Her basis for uneasiness is that her first baby, a few hours after birth, became asphyxiated and a pediatrician called in consultation diagnosed the case as enlarged thymus, the infant surviving after repeated blood transfusions and roentgen-ray and radium exposures. I can find nothing in the literature to indicate this condition as hereditary and transmitted from mother to child. Am I correct in advising her that her second baby is likely not to be affected as the first? Also, what is the frequency of this condition, in a pathologic degree, at birth? Please omit name.

M.D., Texas.

ANSWER.—An enlarged thymus, while congenital, is not hereditary. The fact that the patient once gave birth to a baby with an enlarged thymus does not necessarily indicate that all her subsequent children will have the same abnormality. The frequency of this condition is difficult to estimate because not all are agreed on what constitutes an enlarged thymus. Furthermore, it is not always easy to detect an enlargement of this gland and occasionally a diagnosis of enlarged thymus is made when there is no increase in size. Peterson and Miller (THE JOURNAL, July 26, 1924, p. 234) maintain that an abnormally enlarged thymus occurs in from 40 to 50 per cent of all newborn infants. If these authors are correct, the patient's next baby will have almost an even chance of being born with an abnormally enlarged thymus. Not all of the children born with an enlarged thymus, of course, develop symptoms due to this condition. When symptoms suggestive of thymic enlargement arise, estimation of the size of the thymus can more definitely be made by means of the roentgen ray than by clinical methods. Stereoscopic films of the chest taken at the end of expiration are more practical than the fluoroscope.

PATERNITY TESTS BY BLOOD GROUPING—INSULIN DOSAGE

To the Editor:—1. I would like some information concerning the present status, for medicolegal purposes, of all paternity tests by blood grouping. I especially desire to know whether one or both alleged parents can be definitely ruled out if the child in question does not follow in the blood group of one or the other. 2. Has any method ever been worked out satisfactorily by which the dosage of insulin can be measured by the amount of blood sugar present? I am aware of the fact that one unit of insulin metabolizes from 1 to 2.5 Gm. of sugar as expressed by sugar in the urine. In other words, I desire to know how many units of insulin will lower the blood sugar any specific number of milligrams per hundred cubic centimeters after making due allowance for body weight and dehydration. Please omit name.

M.D., California.

ANSWER.—1. The answer to the question as it stands is "No." Neither alleged parent can be ruled out simply because the child does not fall in the group of one or the other. For example, parents of groups A or B may have children of all four groups. The child of group O, for instance, could have one parent of group A and the other of group B. This would also be true of a child of group AB. Again, a child of group O could have both parents in group A or group B. A child of group B could have one parent in group A, the other in group AB. In none of these cases does the child belong to the group of either parent.

2. The value of insulin is based almost entirely on the changes found in the urinary output. We are unable to find any information which indicates a satisfactory dosage of insulin as measured by changes in blood sugar. There seems to be a great variation in individual patients in the reaction of their blood sugar to insulin injections.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Regular Board. Little Rock, May 13-14, 1930. Sec., Dr. S. J. Albright, Searcy, Ark. Homeopathic Board. Little Rock, May 13, 1930. Sec., Dr. Allison Pringle, Eureka Springs, Ark. Eclectic Board. Little Rock, May 13, 1930. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith, Ark.

ILLINOIS: Chicago, April 8-10, 1930. Supt., Mr. P. B. Johnson, Springfield, Ill.

MINNESOTA: Minneapolis, April 15-17, 1930. Sec., Dr. E. T. Sanderson, 524 Lowry Medical Arts Bldg., St. Paul, Minn.

NEVADA: Carson City, May 5-7, 1930. Sec., Dr. Edward E. Hamer, Carson City, Nev.

NEW MEXICO: Santa Fe, April 14-15, 1930. Sec., Dr. W. T. Joyner, Roswell, N. M.

WEST VIRGINIA: Charleston, April 8, 1930. Sec., Dr. W. T. Henshaw, Charleston, W. Va.

WISCONSIN: Milwaukee, April 8, 1930. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse, Wis.

Minnesota October Examination

Dr. E. T. Sanderson, secretary of the Board of Medical Examiners of Minnesota, reports the oral, written and practical examination held at Minneapolis, Oct. 15-17, 1929. The examination covered 12 subjects and included 60 questions. An average of 75 per cent was required to pass. Twenty-five candidates were examined and passed. Ten physicians were licensed through reciprocity with other states and 3 by the endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College		(1928)	93.3
University of Illinois School of Medicine		(1929)	83.2, 88.6, 93.4
University of Maryland School of Medicine		(1927)	90.2
Harvard University Medical School		(1929)	93.1
University of Michigan Medical School		(1927)	89.6
University of Minnesota Medical School		(1929)	84.6, 85.1,* 86.2* 88.1, 88.2, 88.3, 89,* 89.6,* 90.5,* 91.1, 95, 95.1, 96
University of Cincinnati College of Medicine		(1924)	90.1
University of Oregon Medical School		(1927)	93.1
University of Pennsylvania School of Medicine		(1925)	88.1
Trinity Medical College Faculty of Medicine		(1895)	91.4
University of Toronto Faculty of Medicine		(1924)	90.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1920)	California
University of California Medical School		(1927)	California
Northwestern University Medical School		(1921)	Illinois
Rush Medical College		(1900)	South Dakota
University of Kansas School of Medicine		(1929)	Kansas
Johns Hopkins University School of Medicine		(1918)	Maryland
Harvard University Medical School		(1927)	Iowa
Marquette University School of Medicine		(1927)	(1929) Wisconsin

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Rush Medical College		(1928)	N. B. M. Ex.
University of Pennsylvania School of Med.		(1926)	(1927) N. B. M. Ex.

* This applicant has received an M.B. degree and will receive an M.D. degree on completion of one year's internship in a hospital.

Arizona April and October Examinations

Dr. H. P. Mills, secretary of the Board of Medical Examiners of Arizona, reports the licensing of reciprocal licentiates at Phoenix, April 2-3, 1929, and the written examination held at Phoenix, Oct. 1-2, 1929. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Six candidates were examined and passed. Eighteen physicians were licensed through reciprocity with other states and 3 by the endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Stanford University School of Medicine		(1928)	90.9
Rush Medical College		(1929)	90.3
Tulane University of Louisiana School of Medicine		(1928)	83.8
Creighton University School of Medicine		(1926)	85.6
University of Nebraska College of Medicine		(1928)	86.3
McGill University Faculty of Medicine		(1927)	88.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of California Medical School		(1903)	California
George Washington University Medical School		(1919)	Dist. Colum.
University of Georgia Department of Medicine		(1901)	Georgia
Northwestern University Medical School		(1922)	Colorado
University of Illinois School of Medicine		(1920)	Minnesota
College of Physicians and Surgeons, Keokuk		(1897)	Iowa
State University of Iowa College of Medicine		(1925)	Iowa
Tulane University of Louisiana School of Medicine		(1898)	New Mexico
University of Maryland School of Medicine		(1916)	W. Virginia
University of Minnesota Medical School		(1928)	Minnesota
Washington University School of Medicine		(1926)	Missouri
Creighton University School of Medicine		(1908)	S. Dakota
Bellevue Hospital Medical College		(1896)	Tennessee
Cornell University Medical College		(1924)	California, (1925) New York
University of Cincinnati College of Medicine		(1918)	Ohio
Jefferson Medical College		(1908)	Penna.
Medical College of Virginia		(1898)	Virginia

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Rush Medical College		(1928)	N. B. M. Ex
University of Illinois School of Medicine		(1928)	U. S. Navy
Tulane University of Louisiana School of Medicine		(1925)	N. B. M. Ex.

Rhode Island April and July Examination

Mr. Lester A. Round, director of the State Public Health Commission of Rhode Island, reports the written examinations held at Providence, April 4-5 and July 2-3, 1929. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Nineteen candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine		(1928)	87.6, 91.7
University of Louisville School of Med.		(1926)	82.3, (1928) 87
University of Maryland School of Medicine		(1928)	82
Harvard University Medical School		(1903)	86, (1927) 92
Tufts Med. College		(1909)	93.5, (1922) 88.1, (1928) 86.4, 88.4, 91.3, 93
Hahnemann Med. College and Hospital of Philadelphia		(1928)	89.8
University of Pennsylvania School of Medicine		(1906)	94.2
Laval University Faculty of Medicine		(1900)	84.9
University of Montreal Faculty of Medicine		(1925)	85.7
University of Toronto Faculty of Medicine		(1925)	*
University of Padua Faculty of Medicine		(1917)	92.5

* No grade given.

Utah December Examination

Mr. S. W. Golding, director of the Department of Registration of Utah, reports the examination held at Salt Lake, Dec. 17-18, 1929. The examination covered 10 subjects and included 10 questions. An average of 75 per cent was required to pass. Five candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1929)	88*
University of Louisville School of Medicine		(1929)	87
Columbia University College of Physicians and Surgs.		(1929)	85
Jefferson Medical College		(1927)	86
University of Pennsylvania School of Medicine		(1927)	88

* This applicant has an M.B. degree and will receive an M.D. degree on completion of one year's internship in a hospital.

Tennessee June Examination

Dr. Alfred B. De Loach, secretary of the Board of Medical Examiners of Tennessee, reports the written examination held at Memphis, Nashville and Knoxville, June 14-15, 1929. The examination covered 8 subjects and included 64 questions. An average of 75 per cent was required to pass. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1929)	83.1*
University of Illinois School of Medicine		(1929)	83.5
Tulane University of Louisiana School of Medicine		(1927) (1928) 85.3, (1929) 84.3	88.3,
Johns Hopkins University School of Medicine		(1926)	84.1
Harvard University Medical School		(1926)	88.6
Washington University School of Medicine		(1927)	87.9
University of Nebraska College of Medicine		(1928)	84.1
Eclectic Medical College of Cincinnati		(1929)	84
University of Pennsylvania School of Medicine		(1929)	88
Meharry Medical College		(1928)	85.5, (1929) 82.5, 84.9, 85.6, 85.6, 85.7, 86, 86, 86.2, 86.2, 86.3, 86.9, 86.9, 87, 87.1, 87.1, 87.2, 87.3, 87.6, 87.6, 87.7, 87.7, 88, 88, 88.1, 88.6, 88.6, 88.6, 89, 89, 89, 89.2, 89.5, 89.7, 89.9, 90.7, 90.7, 91
University of Tennessee College of Medicine		(1928)	84.5, (1929) 77.6, 79.5, 79.9, 80.1, 80.7, 80.9, 81, 81.5, 81.5, 81.6, 81.9, 82, 82, 82.2, 82.3, 82.5, 82.5, 82.6, 82.6, 82.6, 82.7, 82.9, 83, 83, 83, 83.1, 83.1, 83.2, 83.3, 83.5, 83.5, 83.6, 83.6, 83.7, 83.7, 83.7, 83.9, 84.1, 84.1, 84.2, 84.5, 84.5, 84.5, 84.5, 84.5, 84.9, 84.9, 84.9, 84.9, 85, 85.1, 85.2, 85.2, 85.3, 85.7, 86.1, 86.5, 86.7, 86.9, 87.3, 87.9, 88.1, 89.2
Vanderbilt University School of Medicine		(1929)	83.5, 83.9, 83.9, 84.1, 84.5, 85.1, 86, 86.5, 86.5, 86.7, 86.7, 86.9, 87, 87.1, 87.1, 87.2, 87.2, 87.3, 87.5, 87.6, 88.2, 88.2, 88.2, 88.4, 88.5, 88.6, 88.6, 88.6, 89, 89.5, 89.6, 89.6, 89.9, 90, 90.1, 90.9, 91.1
Medical College of Virginia		(1929)	78.5
University of Virginia Department of Medicine		(1928)	91
Licentiate of the Triple Qualification Board of Scotland		(1900)	81.1

* This applicant has an M.B. degree and will receive an M.D. degree on completion of one year's internship in a hospital.

Book Notices

ULTRAVIOLET LIGHT AND VITAMIN D IN NUTRITION. By Katharine Blunt, President of Connecticut College, and Ruth Cowan, Instructor in Home Economics, the University of Chicago. Cloth. Price, $2.50. Pp. 229, with 39 illustrations. Chicago: University of Chicago Press, 1930.

The last ten years has witnessed an important increase in our knowledge of bone growth, of the storage of calcium and phosphorus and of the abnormal metabolism causing rickets. The solution of many problems has been achieved by the study of the action of the ultraviolet rays and the antirachitic vitamin D. Basic experiments are cited in this book and the authors have separated the well substantiated facts from material that can be accepted only tentatively. Enough details of the investigations are given to form a basis for the conclusions drawn. The authors discuss in detail the discovery that vitamin D is formed from ergosterol by a chemical action of light. The presence of ergosterol in the skin of man and animals probably explains the antirachitic action of the violet rays. The discussions of artificial sources of these rays, the variations of potent rays in sunshine and the filtering done by the different types of glass are of practical use to the physician. The book cites the experiments of Daniels and Steenbock in calcium and phosphorus balance as affected by irradiated food. Of particular interest was the experimental production of artificial rickets in rats and its correction by giving vitamin D or by irradiation, as measured by the line test. Two of the most important features of the book are the relation of tooth development and caries to the antirachitic vitamin and the balance experiments on pregnancy and lactation. "Irradiating a woman does more for her milk than does taking cod liver oil. The baby, however, gains more by direct irradiation or by having cod liver oil itself than by indirect treatment through the mother." The chapter on irradiated foods and viosterol is particularly valuable. With an account of the remarkable experiments attending the potency of viosterol a word of caution reminds the reader of the danger of improper use and the futility of the extravagent claims that usually follow a new discovery. Viosterol has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, and the Council designates vitamin D potency as multiples of the vitamin D potency of good cod liver oil. The book is primarily of interest to the physician, dentist and teacher of nutrition, but it is of particular value to the biochemist as a foundation for further experimentation.

UEBER HERZSCHWÄCHE. Von Dr. Hans Kutschera-Aichbergen. Mit einem Vorwort von Prof. Dr. K. F. Wenckebach. Paper. Price, 6 marks. Pp. 152. Berlin: Urban & Schwarzenberg, 1929.

The thesis defended by the author is that heart weakness is largely a heart muscle, fatigue phenomenon on the same order as fatigue of skeletal muscles. It depends less on anatomic lesions than on chemical and physicochemical changes. Especially, it is intimately related to the chemistry of phosphorus. This theory applies to heart weakness in chronic heart disease as well as in acute infections. In the latter condition, alterations in the suprarenals are largely concerned in bringing about the failure of the heart. The volume represents much labor. While not settling the vexed question of heart weakness, it is a stimulating and valuable contribution along that line.

GRENZ RAY THERAPY. By Gustav Bucky, M.D. With Contributions by Dr. Otto Glasser, and Dr. Olga Becker-Manheimer. Translated by Walter James Highman, M.D. Cloth. Price, $3.50. Pp. 170, with 40 illustrations. New York: Macmillan Company, 1929.

This book fills a need in compiling under one cover a summary of all the available information concerning this new method of treatment, which makes use of rays with a wavelength of about 2 angstrom units. As the author states, it is not intended to be the last word on the subject. Grenz-ray therapy is still too new for any hard and fast rules to be laid down regarding its field of application, technic and results. A comparison with the development of roentgen therapy shows that it took many years of clinical experimentation to evolve a standardized technic. Grenz-ray therapy shows promise of being a useful addition to the armamentarium of the dermatologist on account of the high degree of safety of the method and the avoidance of dangerous sequelae. Whether it will ever supersede roentgen rays in dermatology, as Bucky infers, is still a debatable question. The constitutional effects of the grenz-ray make it apparently helpful in the treatment also of internal diseases associated with disturbances of the autonomic nervous system and of the endocrine glands. One criticism that may be made is that for a work intended to be monographic there is not a sufficiently detailed description and illustration of the apparatus. This deficiency is in part made up by including explicit directions for the measurement of dosage and several tables showing the technic of treatment as employed in different clinics. The translation by Highman is, as usual, scholarly and readable.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus, und P. Uhlenhuth. Lieferung 37, Band X. Die Methoden des Tierversuchs. Von Prof. Dr. E. Friedberger, und Privatdozent Dr. F. Schiff. Anreicherungsverfahren. Von Prof. L. Lange. Vorschriften für bakteriologische Laboratorien. Von Prof. Dr. W. Fromme. Der Versand von Bakterienkulturen, infektiösem und infektionsverdächtigem Material mit besonderer Berücksichtigung seiner gesetzlichen Regelung. Von Prof. Dr. Th. Messerschmidt. Methoden zum Nachweis von Bodenorganismen. Von Prof. Dr. L. Schwarz. Methoden zum Nachweis der Wasser- und Abwasserorganismen. Von Prof. Dr. R. Kolkwitz. Die bakteriologische Untersuchung des Wassers und des Abwassers. Von Prof. Dr. O. Spitta. Mikrobiologische Untersuchungsmethoden für die Luft. Von Prof. Dr. M. Hahn. Sammeln, Präparieren, Untersuchen und Bestimmen der hygienisch wichtigen Insekten. Von Dr. A. Lutz. Methoden der Züchtung von Wanzen, Läusen und Flöhen. Von Prof. Dr. A. Hase. Technik und Methodik der Gewebskulturen. Von Dr. A. Fischer. Third edition. Paper. Price, 38 marks. Pp. 185-636, with 248 illustrations. Jena: Gustav Fischer, 1929.

This issue is a continuation of the section on technical methods and procedures (Lieferung 30). It will be found invaluable by all practical laboratory workers. There is a richly illustrated article on animal experimentation. The chapter on enrichment and concentration methods will be found especially useful. Other chapters deal with rules and precautions to be observed in the laboratory, with water, soil and sewage micro-organisms, and with the collection, preparation and arrangement of museum material. There is a brief chapter on methods and technic for tissue culture by A. Fischer, who has himself made important contributions in this field. The article on the microscopic fauna and flora of water and sewage will seem to most American readers somewhat lacking in reference to American investigations; this is especially unfortunate as much of the important pioneer work was carried out in the United States.

THE ESSENTIALS OF MEDICAL DIAGNOSIS. A Manual for Students and Practitioners. By Sir Thomas Horder, K.C.V.O., M.D., F.R.C.P., Physian in Ordinary to H. R. H. the Prince of Wales, and A. E. Gow, M.D., F.R.C.P., Physician with Charge of Out-Patients and Demonstrator of Practical Medicine at St. Bartholomew's Hospital. Cloth. Price, $5. Pp. 682, with 46 illustrations. New York: William Wood & Company, 1929.

The book is well written. It contains nothing new. As it is intended for beginning students, it is necessarily quite elementary. The entire field of medicine is covered superficially in systems, with a brief anatomic and physiologic introduction to each system.

LA HIPERTENSION ARTERIAL, HIPERTONIA ARTERIAL O HIPERPIESIS Y LOS ESTADOS HIPERTENSIVOS, HIPERTÓNICOS O DE HIPERPIESIA. Por el Doctor Mariano R. Castex, presidente de la Academia Nacional de Medicina de Buenos Aires. Prólogo del Doctor H. Vaquez, profesor de la Facultad de Medicina y miembro de la Academia de Medicina de Paris. Cloth. Pp. 590, with illustrations. Buenos Aires: Humberto Andrecetta, 1929.

This monograph begins with a discussion of our conceptions of the anatomic, physiologic and physicochemical factors concerned in the production of the normal arterial pressure. The influence of the sympathetic nervous system in regulating blood pressure is stressed. An interesting clinical presentation of hyperpiesis as it occurs in disease and also in certain physiologic conditions follows. The chapters on paroxysmal hypertension and on cerebral origin are the most interesting. The hyperpiesis associated with gout, diabetes mellitus, endocrine disturbances, cardiovalvular disorders and renal diseases are discussed in detail, a chapter being devoted to each one. The bibliography is adequate.

Medicolegal

Workmen's Compensation: Physician's Testimony as to Whether Injury is Disabling; Refusal to Submit to Examination Under Anesthetic.—A physician who has examined an injured employee and testified to the conditions he discovered may also testify whether or not, in his opinion, the ailment constitutes a disabling injury. In so testifying he is not invading a province of the court, for whether or not an ailment constitutes a disabling injury is not the ultimate fact which the court or jury is to decide. Further, he may state that opinion without stating in advance all the data on which it is based. It is sufficient if it appears in advance that he had an opportunity to observe and did observe. The detailed grounds on which the opinion is based can be drawn out in cross-examination. It is not error for the court to refuse to require the claimant to submit to an anesthetic to determine the character and extent of the injury. Such a demand is not made to effect a cure of the injury, but merely to determine whether or not the claimant is malingering and whether or not the testimony of medical experts is worthy of belief. Under these circumstances, the refusal of the claimant so to submit himself and the refusal of the trial court to require him to do so is not unreasonable.—*Gilbreath v. Prarie Oil & Gas Co. (Kan.) 278 Pac. 707.*

Workmen's Compensation Acts: Valvular Heart Disease Following Trauma.—A workman, in the course of his employment, was struck by a piece of rock dislodged by a blast. The bones of the forearm were fractured, his chest and abdomen were contused, and he was rendered unconscious by the impact. Because the State Industrial Commission did not hold that there was a permanent total loss of the use of his arm and a total temporary disability caused by the injury to his heart, he appealed to the Circuit Court of Cecil County. The court affirmed the order of the commission as to the disability resulting from the injury to the arm. It reversed, however, the finding of the commission denying the claim for injury to the heart and remanded the case for allowance of further compensation because of that injury. From this decision, the employer and insurer appealed to the Court of Appeals of Maryland. The opinions of the several medical witnesses agreed that valvular heart disease such as that from which the workman suffered is commonly due to infection. There was no evidence, however, to show that prior to the accident he had had rheumatism or any other condition to account for the existence of a valvular heart disease; the evidence showed that he had a sound heart and was in vigorous health at that time.

It is a very significant fact, said the Court of Appeals, that this workman had a sound heart and vigorous health up to the time of the accident, but at the time of the trial was an invalid because of the condition of his heart, discovered in the course of the hospital treatment for his injuries. The claim that the trouble with his heart was not caused by the blow, but was caused probably by some infection, is inconclusive on the question before the court. The evidence tends to exclude any source of infection other than that which developed in the appellee's injured arm. A murmur of his heart had been noticed before that infection originated, but the infection of the arm preceded the more serious heart symptoms. There is a reasonable basis, therefore, for the inference of a causal relation between the injury and the subsequent condition of the heart, by which ability to work has been impaired. The judgment of the court below in favor of the workman was affirmed.—*Needl Const. Co. v. Mason (Md.), 146 Atl. 748.*

Workmen's Compensation: Disability Due to Subjective Symptoms Compensable.—The workmen's compensation act of Louisiana provides that compensation shall be awarded for only injuries proved by competent evidence, of which there are or have been objective symptoms proved that are not within the physical or mental control of the injured employee. The object of this provision is to prevent imposition and fraud, but it is not intended to relieve an employer from the obligation to pay compensation. It is necessary only that objective symptoms be proved; then such subjective results as may be imputed to the proved objective symptoms are compensable. Where a blow on the head has caused headaches, impairment of vision, stiffness of the neck, pain in moving the head, and consequent disability, the fact that the fracture in the plaintiff's skull that gave rise to this disability has healed and that no evidence of a fracture appears even by the use of roentgen rays is not important. The question is only whether the injured workman has recovered from the effects of his proved injury.—*Brown v. Joseph Rathbone Lumber Co. (La.), 123 So. 383.*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 15-18. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for the Study of the Feebleminded, Washington, D. C., May 5-10. Dr. H. W. Potter, Thiells, New York, Secretary.

American Association for Thoracic Surgery, Philadelphia, May 12-14. Dr. Duff S. Allen, Washington University Medical School, St. Louis, Secretary.

American Association of Anatomists, Charlottesville, Va., April 17-19. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Sec'y.

American Association of Genito-Urinary Surgeons, French Lick, Ind., May 22-24. Dr. Herman L. Kretschmer, 122 S. Michigan Avenue, Chicago, Secretary.

American Association of Pathologists and Bacteriologists, New York, April 17-18. Dr. H. T. Karsner, 2085 Adelbert Road, Cleveland, Sec'y.

American Bronchoscopic Society, Atlantic City, May 27. Dr. Louis H. Clerf, 128 S. Tenth Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Quebec, May 12-14. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Mass., Sec'y.

American Gastro-Enterological Association, Atlantic City, May 5-6. Dr. Charles G. Lucas, 321 West Broadway, Louisville, Secretary.

American Gynecological Society, Hot Springs, Va., May 19-21. Dr. Floyd E. Keene, 133 S. 36th Street, Philadelphia, Secretary.

American Laryngological Association, Swampscott, Mass., May 22-24. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 28-30. Dr. Robert L. Loughran, 33 E. 63d Street, New York, Secretary.

American Otological Society, Swampscott, Mass., May 20-22. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.

American Psychiatric Association, Washington, D. C., May 5-10. Dr. C. O. Cheney, Hudson River State Hospital, Poughkeepsie, N. Y., Sec'y.

American Society for Clinical Investigation, Atlantic City, May 5. Dr. Cyrus C. Sturgis, Simpson Memorial Institute, Ann Arbor, Mich., Sec'y.

American Surgical Association, Philadelphia, May 15-17. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

Arizona State Medical Association, Phoenix, April 24-26. Dr. D. F. Harbridge, 407 Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Fort Smith, May 6-8. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Del Monte, April 28-May 1. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

Connecticut State Medical Society, Hartford, May 21-22. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia Medical Society of the, Washington, May 7-8. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, Secretary.

Florida Medical Association, Pensacola, May 6-7. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, May 14-16. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, April 26-28. Dr. A. N. Sinclair, Box 3373, Honolulu, Secretary.

Illinois State Medical Society, Joliet, May 20-22. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Marshalltown, May 14-16. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Topeka, May 6-8. Dr. J. F. Hassig, Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, Shreveport, April 29-May 1. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.

Mississippi State Medical Association, Vicksburg, May 13-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Hannibal, May 12-15. Dr. E. J. Goodwin, 1023 Missouri Building, St. Louis, Secretary.

National Tuberculosis Association, Memphis, Tenn., May 7-10. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

Nebraska State Medical Association, Lincoln, May 13-15. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 13-14. Dr. D. E. Sullivan, 7 N. State Street, Concord, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, April 28-30. Dr. L. B. McBrayer, Southern Pines, Secretary.

North Dakota State Medical Association, Bismarck, May 27-28. Dr. Charles MacLachlan, San Haven, Secretary.

Ohio State Medical Association, Columbus, May 13-15. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Shawnee, May 26-28. Dr. Claude A. Thompson, Barnes Building, Muskogee, Secretary.

South Carolina Medical Association, Florence, May 6-8. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Sioux Falls, May 20-22. Dr. John F. D. Cook, Langford, Secretary.

Tennessee State Medical Association, Nashville, April 8-10. Dr. H. H. Shoulders, Lambuth Building, Nashville, Secretary.

Texas, State Medical Association of, Mineral Wells, May 6-8. Dr. Holman Taylor, Medical Arts Building, Ft. Worth, Secretary.

West Virginia State Medical Association, White Sulphur Springs, May 20-22. Mr. Joe W. Savage, Box 1541, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obst. & Gynecology, St. Louis

19: 153-298 (Feb.) 1930

Recent Important Advances in Obstetrics and Gynecology. G. V. A. Brown, Detroit.—p. 153.
New Physiology of Menstruation and Practical Implications in Obstetrics and Gynecology. R. W. Johnstone, Edinburgh, Scotland.—p. 167.
Time of Ovulation in Menstrual Cycle as Checked by Recovery of Ova from Fallopian Tubes. Q. U. Newell, St. Louis; E. Allen and L. J. Bland, Columbia, Mo., and J. P. Pratt, Detroit.—p. 180.
Repair of Complete Perineal Laceration. G. D. Royston, St. Louis.—p. 185.
*Early Diagnosis of Acute Intestinal Obstruction. F. M. Douglass, Toledo, Ohio.—p. 196.
*Protective Rôle of Liver in Abdominal Surgery. C. G. Heyd, New York.—p. 203.
Transition to Malignancy in Benign Lesions of Uterine Mucosa. W. R. Cooke, Galveston, Texas.—p. 210.
Surgical Treatment of Certain Puerperal Infections. J. F. Baldwin, Columbus, Ohio.—p. 219.
Anatomy of Female Pelvis and Perineum in Relation to Labor. C. R. Hannah, Dallas, Texas.—p. 228.
Rôle of Thyroid in Differential Development. E. P. Sloan, Bloomington, Ill.—p. 235.
Teaching of Postgraduate Gynecology. W. T. Dannreuther, New York.—p. 241.
*Critical Study of 335 Hysterectomies. J. E. Davis and P. L. Cusick, Detroit.—p. 246.
Nonmalignant Breast Conditions: Diagnosis and Treatment. W. S. Bainbridge, New York.—p. 255.
*Rapid Nonsurgical Procedure for Aiding Childbirth. N. Temesvary, Budapest, Hungary.—p. 267.
*Postoperative Abdominal Auscultation. J. E. King, Buffalo.—p. 273.
Sarcoma of Vagina: Four Cases. S. E. Tracy, Philadelphia.—p. 279.
Metastasis of Ovarian Carcinoma. M. A. Tate, Cincinnati.—p. 285.
*Rupture of Uterus: Seventeen Cases. I. W. Potter, Buffalo.—p. 289.
Variation in Length of Labor. L. A. Calkins, Kansas City, Mo., and J. H. Irvine and G. W. Horsley, University, Va.—p. 294.

Early Diagnosis of Acute Intestinal Obstruction.—Douglass comments forcefully on the value of the roentgen ray in the early diagnosis of acute intestinal obstruction. He analyzes sixty-seven cases.

Protective Rôle of Liver in Abdominal Surgery.—The treatment advocated by Heyd to prevent chemical deaths following surgical intervention for abdominal disease is based on the following considerations: 1. A continuous and persistent effort should be made to combat the dehydration, whether it is sequential to vomiting or not. 2. Gastric rest must be insured. 3. In cases in which there is evidence of intestinal obstruction or marked jejunal reflux, jejunostomy has been a satisfactory procedure in the author's hands. It completely takes care of the retrograde peristalsis and prevents the overwhelming toxemia of high intestinal obstruction, and later it affords a ready means of fluid replacement through the attaching of the jejunostomy tube to a rectal drip. 4. It is essential to have repeated chemical determinations of the blood to control or indicate further therapy. 5. If symptoms of tetany appear, 5 cc. of a 10 per cent solution of calcium chloride is given intravenously and repeated when necessary. 6. Solutions of sodium bicarbonate should be avoided in any form as this solution is frequently employed for gastric lavage.

Critical Study of Three Hundred and Thirty-Five Hysterectomies.—The data for this study have been gathered by Davis and Cusick from 335 patients on whom hysterectomies have been performed in six different hospitals by thirty-five different operators. The tabulated material shows that hysterectomy is the prevailing operation of choice for fibromyomas of the uterus, averaging approximately 72 per cent in this study and in the clinics of forty-five of the leading operators in this country and Canada. Approximately 30 per cent of uteri are removed because of malignant growths, inflammations, hyperplasias and malpositions. The prevailing symptoms of uterine disease for which relief is sought are pain, tumor and bleeding. The combined use of hysterectomy and the roentgen rays or radium is a treatment of great promise in all types of uterine disease, especially for cancer of the cervix.

Rapid Nonsurgical Procedure for Aiding Childbirth.—Temesvary relates his experiences with the use of a combination of extracts of the thymus and the pituitary glands.

Postoperative Abdominal Auscultation.—King states that in the light of present knowledge abdominal auscultation can distinguish only two conditions, the absence of peristalsis or its abnormal activity. Like all specialized procedures in diagnosis, abdominal auscultation requires study and personal observation. The results are obviously not as definite and convincing as those obtained in pulmonary and cardiac disease. No attempt is made to describe the sounds produced by peristalsis. They are too varied. A large number of patients following operation will not show any deviation from the normal. In the study, however, of patients showing disturbance, the stethoscope will reveal much of interest and value. King believes that the term "gas pains" should be eliminated from discussions and left, together with "paralysis of the bowels," to those members of the laity who find it desirable to embellish the recital of their surgical experience.

Rupture of Uterus.—Potter emphasizes first, the signs and symptoms of rupture of the pregnant uterus; second, the time in pregnancy when he has found rupture to occur; third, the necessity for careful observation in all cases in which rupture might be expected, say after the sixth month of pregnancy, because the uterus raises itself out of the pelvis and the tension is greatest at this time because it grows most rapidly; fourth, the fact that gross pathologic change is found more frequently in the uterus than is generally supposed, and that the chief among these pathologic conditions is fibroids, particularly of the intramural type.

American J. Roentgenol. & Rad. Therapy, New York

23: 125-240 (Feb.) 1930

*Present Status of Hysterosalpingography. E. R. Witwer, H. P. Cushman and T. Leucutia, Detroit.—p. 125.
Roentgen Diagnosis of Lesions of Jejunum and Ileum. M. Ritvo, Boston.—p. 160.
Roentgen-Ray Generating System in Which Size of Focal Spot is Automatically Adjusted to Load. W. K. Kearsley, Schenectady, N. Y.—p. 170.
Calculations of Tissue Dosage in Radiation Therapy. H. E. Martin and E. H. Quimby, New York.—p. 173.
Comments on Radium Technic. R. H. Stevens, Detroit.—p. 197.
Supernumerary Distal Phalanx of Thumb: Case. S. M. Weingrow, New York.—p. 206.
Injury to Epiphysis of Lower End of Ulna and Resulting Deformity: Case. E. Birdsall, Glens Falls, N. Y.—p. 208.

Present Status of Hysterosalpingography.—Witwer et al. assert that hysterosalpingography by means of iodized oil is a safe and simple procedure. In a series of 512 personal cases, the only accident observed was that of a ruptured tube, which did not lead to any ill effects. The method is of great diagnostic value in developmental anomalies of the genital organs, in tubal conditions leading to sterility, in certain carefully selected cases of pregnancy in which therapeutic abortion is indicated or a differential diagnosis from other obscure conditions is essential, in uterine tumors, excepting malignant ones, and in certain extra-uterine tumors. The contraindications are recent hemorrhage, inflammatory conditions that are not completely quiescent, active infections or malignant growths involving the cervix, previous intra-uterine interventions, ectopic gestations or uterine gestation in which a therapeutic abortion is not desired, infected cervical or uterine polyps and fever. In certain instances the injection of iodized oil is of direct therapeutic value.

Annals of Internal Medicine, Ann Arbor, Mich.

3: 793-882 (Feb.) 1930

*Lactic Acid Content of Blood and Partition of Inorganic Sulphate in Serum of Patients with Hepatic Disease. E. G. Wakefield and C. H. Greene, Rochester, Minn.—p. 793.
*Spontaneous Rupture of Heart: Perforation of Interventricular Septum. A. S. Hyman, New York.—p. 800.

*Graphic Method of Recording Blood Pressure. L. F. Bishop and L. F. Bishop, Jr., New York.—p. 808.
*Endogenous Obesity: Misconception. L. H. Newburgh and M. W. Johnston, Ann Arbor, Mich.—p. 815.
*Use of Sodium Malate Combinations as Dietary Substitute for Sodium Chloride. J. C. Krantz, Jr., Baltimore.—p. 826.
Typhoid Complicated by Perforated Gangrenous Appendix: Case. M. Bernstein, Philadelphia.—p. 835.
Acid-Base Composition of Gastric Juice During Secretory Cycle. T. L. Bliss, Rochester, Minn.—p. 838.
Hay-Fever: Control Through Efferent Interception. H. Byrd, Detroit. —p. 850.
Pioneer Medicine—Dr. Joseph O'Dwyer and Dr. William Dunlop. J. W. Crane, London, Ontario.—p. 856.

Lactic Acid Content of Blood of Patients with Hepatic Disease.—A slight increase in the content of lactic acid of samples of blood taken before breakfast was found by Wakefield and Greene in some patients with severe hepatic disease. The increase was not sufficiently great, and did not occur with sufficient frequency, to make this test of great diagnostic significance or usefulness. The inorganic sulphates in the serum were increased slightly in the present group of cases, whereas the conjugated or ethereal sulphates were reduced to less than 0.5 mg. for each hundred cubic centimeters of serum in patients with severe or terminal hepatic disease.

Spontaneous Rupture of Heart; Perforation of Interventricular Septum.—In the case presented by Hyman, the rupture was between two cardiac chambers instead of into the pericardium.

Graphic Method of Recording Blood Pressure.—In their study of graphic methods the Bishops have used the Tycos recording sphygmomanometer. The tracings are made directly on the revolving disk and are purely pressure graphs caused directly by the arterial pulsations; they do not represent units of time or of time and pressure. No clock or motor is used, but instead a small stream of air escaping from a light collapsible metal tube sets the kymograph in motion. Decrease of pressure of the cuff round the brachial artery causes deflation through the light tube. Diminishing pressure in the arm band allows the arterial force to be felt, and to be imparted to the pen of the oscillometer, which in turn records the tracing on the moving disk. Removal of the personal equation in blood pressure is probably the most important point in the use of a graphic method.

Endogenous Obesity.—Newburgh and Johnston assert that obesity is always caused by an overabundant inflow of energy. The excess is deposited as adipose tissue. This disproportion arises from a variety of conditions that may be thought of under two general headings. The first group includes the various human weaknesses such as overindulgence and ignorance. The second group is composed of conditions that cause a decrease in the requirement for energy, such as lessened activity or lowering of the basal metabolic rate for any reason. If the long established food habits do not respond to this lessened demand, obesity is inevitable.

Use of Sodium Malate Combinations as Dietary Substitute for Sodium Chloride.—Krantz narrates his experiences leading to the discovery of the sodium salt of malic acid as a substitute for ordinary table salt. For convenience in the laboratory, the saline mixture was designated as eka salt. This mixture consisted of 85.5 per cent sodium malate, 9 per cent citrate, 5 per cent ammonium citrate and 0.5 per cent manganese bromide. It does not cause an increased chloride elimination by the kidney. In the ingestion of 4 Gm. the maximum quantity generally employed as a condiment, the malic acid present is completely metabolized. Certain advantages of this substance, which is essentially sodium malate, over sodium chloride in salt-restricted diets were shown experimentally.

Archives of Internal Medicine, Chicago

45: 161-318 (Feb.) 1930

Lymphoma. C. W. Baldridge and C. D. Awe, Iowa City.—p. 161.
*Use of Epinephrine as Diagnostic Test for Angina Pectoris. S. A. Levine, A. C. Ernstene and B. M. Jacobson, Boston.—p. 191.
Capillary Circulation in Alveolus Pulmonalis of Living Dog. D. M. Olkon and M. Joannides, Chicago.—p. 201.
*Heat and Effort Sensitiveness: Cold Sensitiveness. W. W. Duke, Kansas City, Mo.—p. 206.
Area of Body Surface and Measurements of Normal Heart in Children: II. Roentgen Study. R. W. Kissane, Columbus, Ohio.—p. 241.
Mechanism of Secondary Anemia. A. H. Douglas and H. Tannenbaum, New York.—p. 248.
*Twenty-Four Hour Blood Sugar Variations in Fasting and Nonfasting Subjects. J. S. Sweeney, Dallas, Texas.—p. 257.
*Range of Effective Iodine Dosage in Exophthalmic Goiter: I. Effect on Basal Metabolism of Rest and Daily Administration of One Drop of Compound Solution of Iodine. W. O. Thompson, A. G. Brailey, P. K. Thompson and E. G. Thorp, Boston.—p. 261.
*Diazo Color Reaction Found in Uremia. I. M. Rabinowitch, Montreal, Canada.—p. 282.
*Blood of Normal Young Women Residing in Subtropical Climate. M. M. Wintrobe, New Orleans.—p. 287.
Clinical Value of Tests of Liver Function. E. F. Foley, Chicago.—p. 302.

Use of Epinephrine as Diagnostic Test for Angina Pectoris.—Epinephrine was administered subcutaneously by Levine et al. in doses of 1 cc. to three groups of persons: one group of eleven with angina pectoris, a second of ten of the same average age but without angina, and a third of ten normal young adults. In all but one patient with angina pectoris, typical pain resulted from the injection. In none of the control patients did this pain occur. Electrocardiographic studies showed that following the injection of epinephrine the T wave in the anginal group increased slightly in amplitude, while in the other two groups it showed a tendency to decrease. The increase in blood pressure and pulse rate was somewhat greater in the anginal group than in the others. It is suggested that the production of anginal pain by the injection of epinephrine may serve as a diagnostic test for angina pectoris. The test would not be applicable when the diagnosis is certain but rather in doubtful cases or when there are other possible explanations for the symptoms, such as gallstones or disease of the stomach or the duodenum. Because epinephrine produces typical pain with great regularity in patients with angina pectoris, the therapeutic use of the drug in such patients should be carried out with great caution.

Heat and Effort Sensitiveness; Cold Sensitiveness.—Duke enumerates a series of relatively common illnesses which rather frequently are caused, he believes, by disorder in the heat regulating mechanism. These illnesses included heat prostration, the effort syndrome, noninfectious coryza, asthma, urticaria, dermatoses and other miscellaneous ailments. Allergic reactions to foreign substances may give rise to symptoms similar to those of sensitiveness to heat or cold and may therefore add to the manifestations of heat and cold sensitiveness or in some instances may cause sensitiveness of this type for the time being. The treatment of patients highly sensitive to body heat and effort is likely to be a serious problem. The treatment of patients sensitive to body cold is likely to be brilliant or at least successful. Patients who are highly sensitive to heat should avoid effort unless they can be adequately cooled. They should avoid situations in which they are likely to be overheated. They are likely to do best in a dry, cool climate. Even a dry, warm climate may be better for them than a cool, humid climate. Dry air makes body cooling easier. Heat sensitive patients can stand more effort in a dry atmosphere than they can in a humid atmosphere. It may be necessary for them to seek an environment and career that will enable them to lead a quiet life in a dry atmosphere. This may be the best solution in cases of extreme sensitiveness. In cases of moderate sensitiveness, relief can frequently be obtained through attention to the general health and through the use of agents designed to keep the body temperature running at a higher level. A febrile disease almost always gives temporary relief and frequently prolonged relief. Fever can be induced artificially through the subcutaneous or intravenous injection of colon bacilli. The intravenous use of colon bacilli is likely to give a quick febrile attack even if given in doses as small as 10,000. The subcutaneous use is much safer. Duke believes that some of the therapeutic results that follow the use of autogenous vaccines, peptone and milk in the treatment of persons with noninfectious coryza, asthma, eczema and hives frequently owe their beneficial effect to the elevation of body temperature from subnormal toward normal or above normal. Temporary relief can often be obtained through the use of hot or cold baths given when the patient needs them. Cold baths for the temporary relief of an attack may be effective within a few moments and may give a sensational result. Hot baths at midnight for the

prevention of a drop in temperature from relatively normal to a high grade subnormality during the early morning hours may prevent attacks. Symptomatic remedies that are useful for symptoms such as coryza, asthma, urticaria and pruritus are epinephrine, solution of pituitary, ephedrine, atropine and the salicylates. Morphine and alcohol may be effective. Cold sensitive patients, like heat sensitive patients, tolerate changes of temperature in a dry climate better than in a moist climate. Dry air, whether hot or cold, is easier for them to tolerate than humid air. They should be cautioned against undue exposure to cold. Fortunately, patients can frequently gain tolerance to cold through the use of frequent cold baths. Frequently, one can effect complete clinical relief in a cold sensitive patient through so simple a measure as having the patient take a cold bath each morning. Cold baths for from fifteen to thirty seconds, frequently repeated, may suffice to give tolerance. Often, patients tolerate a rapid rub with ice better than a cold bath. If the ice is moved rapidly enough over the skin it does not cause a disagreeable sensation of cold. Ice should be applied over the entire body and the rub should be completed, if possible, within less than one-half minute. Symptomatic remedies suggested in the treatment of heat sensitive persons can be used to advantage in the treatment of cold sensitive patients. Also, if the body temperature is inclined to be subnormal, the patient can frequently be benefited through the use of agents that raise the temperature.

Twenty-Four Hour Blood Sugar Variations in Fasting and Nonfasting Subjects.—Twenty-four hour blood sugar curves were made by Sweeney for fasting and nonfasting normal persons. By these studies are explained certain observations noted in the handling of diabetic cases. It is suggested that by taking into account the normal variations of the blood sugar curve, diabetic patients may be more accurately, satisfactorily and economically controlled.

Effect on Basal Metabolism of Rest and Administration of Iodine.—During the daily administration of 1 drop of compound solution of iodine (about 6 mg. of iodine) to seventeen unselected hospital patients with exophthalmic goiter, fifteen showed a reduction of from 15 to 49 points in basal metabolism, and two showed no change. The reduction appeared to be as great as that noted by other observers with much larger doses. A maximum decrease in basal metabolism also appeared to occur in most outpatients during the administration of 1 drop daily. In the house patients, the administration of 1 drop daily caused a maximum reduction in basal metabolism in seven days on the average. The time that elapsed between the beginning of iodine administration and the onset of a decrease in basal metabolism varied from one to four days. In five of the cases it had started within twenty-four hours after the administration of only 6 mg. of iodine. Thompson et al. are of the opinion that the doses of iodine used at present in the routine preoperative and postoperative treatment for exophthalmic goiter are probably needlessly large. They doubt whether more than 5 drops of compound solution of iodine daily is ever necessary to produce a maximum effect. In comparing the effects of various doses of iodine, it is essential to secure a resting level of basal metabolism before medication is begun.

Diazo Color Reaction Found in Uremia.—Rabinowitch says that a positive diazo color reaction is not found in any other condition than severe kidney injury. A positive reaction may frequently be found in persons with severe kidney injury, and such persons may recover. Such cases include the albuminurias of severe infections, the well recognized form of acute nephritis with pallor, edema, acute exacerbations of chronic nephritis, mechanical obstructions to the urinary outflow, surgical lesions of the kidneys with urinary retention and the anuria of diabetic coma. When acute exacerbations of the disease are excluded, a positive reaction occurring in the course of chronic nephritis has invariably meant unfavorable prognosis. When all of the aforementioned factors are given consideration, the test is of value in differentiating uremia from cerebral arteriosclerosis.

Blood of Normal Young Women Residing in Subtropical Climate.—The results of blood determinations made by Wintrobe on fifty healthy young women from the ages of 17 to 30 residing in the southern states lend no support to the hypothesis that a physiologic anemia exists in such a climate.

Archives of Otolaryngology, Chicago

11: 137-264 (Feb.) 1930

Mixed Tumors in Soft Palate. R. Sonnenschein, Chicago.—p. 137.
Unilateral Absence of Sigmoid Sinus. H. I. Laff, Denver.—p. 151.
*Occurrence of Eosinophils in Mucous Membrane of Maxillary Sinus in Asthmatic Patients. G. M. Coates and M. S. Ersner, Philadelphia.—p. 158.
*Frequency of Mastoiditis in Infants. F. C. Helwig and O. J. Dixon, Kansas City, Mo.—p. 169.
*Cardiospasm. C. J. Imperatori, New York.—p. 178.
Changes in Esophagus Secondary to Cardiac and Aortic Diseases. L. Rigler and K. A. Phelps, Minneapolis.—p. 188.
Pulmonary Abscess Following Tonsillectomy. L. H. Clerf, Philadelphia.—p. 192.
Pulmonary Abscess Following Tonsillectomy. T. E. Carmody, Denver.—p. 200.
*Aural Thermometry as Diagnostic Aid in Otology. B. M. Becker, New York.—p. 205.
Disks in Esophagus. S. Jesberg, Los Angeles.—p. 210.
Unusual Foreign Body. C. J. Imperatori, New York.—p. 213.
Special Light Carrier for Seiffert Self-Retaining Direct Laryngoscope with Chest Support. J. W. Miller, New York.—p. 214.
Submucous Turbinectomy. T. H. Odeneal, Beverly, Mass.—p. 215.
Laryngeal Tuberculosis. G. B. Wood, Philadelphia.—p. 217.

Eosinophils in Mucous Membrane of Maxillary Sinus in Asthmatic Patients.—Coates and Ersner found that the eosinophil is present in the mucous membrane of an asthmatic patient in conjunction with purulent conditions in the same membrane. Therefore, it seems logical to them to assume that the asthma and the eosinophil must be closely associated.

Frequency of Mastoiditis in Infants.—Helwig and Dixon conclude that although surgical mastoiditis does occur in infants, its importance has been vastly overrated.

Cardiospasm.—Imperatori concludes that roentgenographic study of the cardia following dilatation would seem to prove that one is dealing not with a spasm but with a peculiar disturbance of the nerve endings in the lower end of the esophagus. From a clinical standpoint, Meltzer's laboratory experiments would seem to be sustained.

Aural Thermometry as Diagnostic Aid in Otology.—Becker states that in acute diseases of the ear with or without constitutional pyrexia, the temperature by ear will equal or exceed that registered by mouth. Therefore, whenever the aural temperature equals or exceeds the oral temperature, irrespective of the normality or abnormality of the latter, one is dealing with an active pathologic process in the ear tract. In using this method, one should not neglect to take the temperature binaurally so as to compare one ear with the other and both with that of the mouth. The thermometer used for this purpose is the rectal type with rather a large mercury chamber or, better still, the oral type, the bulb of which is a direct enlargement of the stem without being separated from it by a necklike constriction. After the canal of the ear is cleaned of discharge or cerumen, the instrument (the mercury of which has been shaken down to 95 or below) is introduced as far as it will go into the meatus, the bulb being directed toward the drum, until its sides rest snugly against the sides of the canal. By the exertion of gentle pressure on the stem, sufficient to retain the instrument in the canal, an air-tight chamber is formed between the thermometer and the drum. Great care must be exercised not to exert undue pressure on the instrument to obtain occlusion of the canal; one must depend rather on the proper relation of size between the instrument and the walls of the canal. Although it is desirable to approach the drum as closely as possible, on no account shall the instrument be made to rest on the drum by the use of too narrow a bulb. Nor shall one choose too large a bulb, for by so doing the test will be vitiated on account of the bulb being too far from the drum and hence too far from the site to be tested. In a person with a normal temperature and no lesion of the ear, if the instrument is used in the manner described it will be found that the aural temperature will register within 1 degree of the oral temperature. Any acute pathologic condition in the aural tract whereby heat is generated locally will by continuity of structure or by conduction be diffused to the surrounding parts. In this method

of thermometry, the surrounding tissues directly and the air chamber will affect the mercury, and it will register a degree of temperature equaling or exceeding that of the oral temperature.

Archives of Pathology, Chicago

9: 445-624 (Feb.) 1930

*Effect of Experimental Hyperthyroidism and Inanition on Heart, Liver and Kidneys. J. L. Simonds and W. W. Brandes, Chicago.—p. 445.
*Variations in Number of White Blood Cells in Dogs Following Eck Fistula. J. S. Lawrence and S. J. Maddock, Boston.—p. 461.
*Giant Cyst of Anterior Abdominal Wall: Urachus Cyst or Enterocystoma? A. Almquist, Stockholm, Sweden.—p. 473.
*Primary Carcinoma of Lungs: IV. Intracranial Metastases. B. M. Fried and R. C. Buckley, Boston.—p. 483.
*Hemangio-Endothelioma of Liver. R. H. Goodale, Beirut, Syria.—p. 528.
Ventral Symmetrical Hyperostoses of Inner Table of Calvarium: Four Cases. L. W. Yolton, Chicago.—p. 534.
Determination of Infectious Nature of Acute Endocarditis. L. Hektoen, Chicago.—p. 540.
Intracellular Symbionts and Rickettsiae. R. W. Glaser, Princeton, N. J. —p. 557.

Effect of Experimental Hyperthyroidism and Inanition on Heart, Liver and Kidneys.—From the data presented by Simonds and Brandes it appears that in starvation the heart and kidneys lose weight in about the same proportion as the body as a whole, or slightly less, while the liver loses in distinctly greater proportion. In experimental hyperthyroidism, not only may the heart not lose weight but in some animals it may appear to increase in size, for the actual weight after prolonged thyroid feeding may be greater than the estimated heart weight at the beginning of the experiment. This apparent hypertrophy is most definite in dogs that have lost from 25 to 35 per cent of their body weight. When the loss of body weight is 40 per cent or more, the effect of experimental hyperthyroidism on the heart appears to be about the same as that of inanition. The effects of inanition and of experimental hyperthyroidism on the kidneys correspond rather closely to their respective effects on the heart. In inanition, the liver loses weight in greater proportion than the body as a whole, and this loss is closely related to the disappearance of glycogen from this organ. In experimental hyperthyroidism, the liver practically maintains its original weight in spite of its loss of glycogen. The relative, if not absolute, hypertrophy of the heart, liver and kidneys in experimental hyperthyroidism is probably due to the combined effect of increased function and augmented blood flow in each of these organs in this condition.

Variations in Number of White Blood Cells in Dogs Following Eck Fistula.—A series of dogs has been studied by Lawrence and Maddock as regards their white blood cell formulas following the production of Eck fistula with and without splenectomy and also following reverse Eck fistula. Simple Eck fistula has been associated with marked increases in the number of circulating monocytes. Splenectomy combined with Eck fistula has produced less striking increases in the number of monocytes, whereas reverse Eck fistula has been associated with increases of about the same degree as those found following control operations of various sorts.

Giant Cyst of Anterior Abdominal Wall: Urachus Cyst or Enterocystoma?—Almquist cites the case of a man, aged 70, who had a cyst containing 20 liters (20,000 cc.) of fluid on the anterior abdominal wall, having a plainly marked primarily muscular continuity with the bladder and a mucous membrane coated with cylindric epithelium. Three alternative diagnoses are offered in explanation of its pathogenesis: urachus cyst, enterocystoma or a cyst originating as does rectovesical fistula through an incomplete septum urorectale.

Primary Carcinoma of Lungs.—Metastases to the central nervous system were found by Fried and Buckley in fifteen of thirty-seven patients with bronchiogenic cancer. For eleven of the fifteen patients, a diagnosis of primary tumor of the brain was made, and the bronchiogenic tumor was overlooked. For the remaining four patients, a definite diagnosis could not be made. An intracranial operation was performed on eleven of the patients, and a metastatic tumor was removed in ten instances. The postoperative survival period of the patients with solitary cerebral metastasis varied from five months to seven years. An early postoperative fatality resulted in every patient with multiple cerebral metastasis. It is believed that when a person of middle age has an abrupt onset of symptoms and signs of a rapidly developing intracranial lesion, a metastatic cerebral lesion should be thought of, and that the lungs are the most common site of the primary lesion. It is realized, moreover, that even in instances in which the examination of the lungs yields negative results, the presence of a primary tumor in these organs cannot be excluded. A metastasis to the brain from a primary pulmonary tumor was commonly mistaken for a rapidly growing glioma, a cerebral vascular lesion or an encephalitis. Apparently, the pulmonary tumor metastasizes to the brain by way of the blood stream. The relatively great frequency of intracranial metastasis is due in all probability to the fact that a tumor embolus from a pulmonary cancer passes from the pulmonary vein directly into the cerebral circulation, whereas cancers from other viscera on their way to the brain are primarily retained by the lungs, where they may remain indefinitely, often being altogether destroyed. There is an outstanding reaction on the part of the microglia and astrocytes to the metastatic lesion, the response being very much like that found in experimental studies on the reaction of the brain to wounds and to infectious invaders.

Hemangio-Endothelioma of Liver.—A case of multiple congenital hemangio-endothelioma of the liver in a male infant, 11 months old, is described by Goodale. The total number of such tumors reported in the literature to date is fourteen.

Canadian M. Assn. Journal, Toronto

22: 157-310 (Feb.) 1930

*Histologic and Biochemical Study of Pathologic Thyroid Material: Effect of Lugol's Solution. D. Wheeler, Winnipeg.—p. 157.
New Whole Wheat Irradiated Biscuit, Containing Vitamins and Mineral Elements. F. F. Tisdall, T. G. H. Drake, P. Summerfeldt and A. Brown, Toronto.—p. 166.
*Surgical Measures in Treatment of Pulmonary Tuberculosis. C. D. Parfitt, Gravenhurst, Ont.—p. 170.
*Treatment of Idiopathic (Hypochromic) Anemia with Iron and Copper. E. S. Mills, Montreal.—p. 175.
Pathology of Cervical Ectropion (Cervical Erosion). J. R. Goodall, Montreal.—p. 178.
Disabilities of Shoulder Joint. H. H. M. Lyle, New York.—p. 180.
Clinical Significance of Some Trends in Adolescence. W. T. B. Mitchell, Montreal.—p. 182.
Indications for Use of Insulin. W. R. Campbell, Toronto.—p. 188.
Clinical Interpretation of Diabetes. J. R. Williams, Rochester, N. Y. —p. 193.
Infection of Upper Respiratory Tract as Etiologic Factor in Pulmonary Disease. I. R. Smith, Toronto.—p. 194.
*Accessory Sinus Disease in Children. I. R. Vaile, Toronto.—p. 198.
Atypical Mastoiditis. A. A. Campbell, Toronto.—p. 201.
Clandestine Diphtheria in Foundling Homes. D. Longpré and P. Panneton, Montreal.—p. 203.
*Causative Factors in Eczema. J. F. Burgess, Montreal.—p. 207.
Sex Hormones of Female. J. B. Collip, Montreal.—p. 212.
Ovary-Stimulating Hormone of Placenta. J. B. Collip, Montreal.—p. 215.
*Clinical Use of Ovary-Stimulating Hormone of Placenta. A. D. Campbell and J. B. Collip, Montreal.—p. 219.
Hypertrophy of Prostate. J. R. Parry, Hamilton.—p. 221.
Eclampsia. H. D. Cowper, Welland, Ont.—p. 225.
Epidemic of Poliomyelitis in Ottawa, 1929. T. A. Lomer and W. T. Shirreff, Ottawa.—p. 228.
Infectious Mononucleosis: Case. L. C. Montgomery, Montreal.—p. 235.
Rat-Bite Fever: Case. J. S. Murray, River John, N. S.—p. 236.
Severe Hemorrhage from Ruptured Lutein Hematoma. H. W. Johnston, Toronto.—p. 237.
Overlooked Case of Scurvy. J. C. Diamond, Fort William, Ont.—p. 238.
Ancient Case of Empyema of Frontal Sinus. J. P. Brown, Toronto.—p. 239.

Histologic and Biochemical Study of Pathologic Thyroid Material.—Wheeler presents in tabular form the results of his study of 126 thyroids obtained at operation. In each case the gland was in a fixing solution or in the drying oven within thirty minutes of its removal from the patient.

Surgical Measures in Treatment of Pulmonary Tuberculosis.—Parfitt reports on compression of the lung by artificial pneumothorax in 141 patients, representing 22 per cent of all tuberculous patients under treatment, or 28 per cent of the moderately and far advanced cases. Satisfactory compression was impossible in sixty-three patients and twenty-seven of these underwent further operations (thoracotomy in five and thoracoplasty in twenty-three). Thirty-four patients also had phrenicotomies (9 per cent of all patients during five years since 1923). A thoracotomy for the division of adhe-

sions, to improve an incomplete artificial pneumothorax, was done in five cases. Although it was successful in improving the pneumothorax, all the patients developed pleural effusions; three of these were transitory, but two became tuberculous empyemas, and in one a streptococcal infection developed. Thoracoplasty has been undertaken in twenty-three cases, or in 3.5 per cent of all tuberculous patients (in 6.5 per cent of the far advanced cases, and in 16.3 per cent of all cases in which artificial pneumothorax was attempted). Four of the operations were for tuberculous empyema. In the majority the complete two-stage operation of Sauerbruch was done. A supplementary apicolysis, for compression of a cavity, was done in two cases, and further rib resections for empyema were carried out in two cases. In only two of the forty-five operations were local anesthetics used alone without gas and oxygen. Accessory radical phrenicotomies were done in seven of these patients. Of the twenty-three thoracoplasties, only fair compression was obtained in six; good compression resulted in ten and excellent compression in seven. The early results obtained from the operation were: one patient dead, as a direct result of operation; one worse, as a result of secondary infection of a tuberculous empyema; five little changed, owing to the short time since operation; six improved, and ten with the condition arrested. After twelve years, the results show six dead, two from nontuberculous disease, three from progressive tuberculosis; one relapsing; one worse; one unchanged; two somewhat improved; three much improved, and nine with the condition arrested. In the early group, 69 per cent obtained good results and up to the present 52 per cent have maintained their position. The average life of all patients since operation has been 3.9 years; of the seventeen living, 4.2 years; of the six dead, 3.25 years. The longest life has been 12.5 years. Twenty of the twenty-three patients have been satisfied with the result of the operation, and the majority were delighted.

Treatment of Idiopathic (Hypochromic) Anemia with Iron and Copper.—Mills prefers the term hypochromic anemia to idiopathic secondary anemia. The effect of rather large doses (75 grains, or 4.8 Gm., daily) of iron in the form of capsules of ferrous carbonate was tried in a group of these patients with only partial success. Then they were placed on capsules containing iron and a concentrated form of vitamin E, but without any appreciable benefit. Next they were given a capsule containing 2 Gm. of ferrous carbonate, copper sulphate 1.5 mg. and phenolphthalein 0.017 Gm. Three capsules were prescribed daily. The phenolphthalein was added to prevent the constipating effect of the iron but proved too laxative. The resulting diarrhea aggravated the anemia. In the second lot of capsules the phenolphthalein was replaced by cascara with good results. Prompt improvement followed in all cases with restoration of the blood to about its normal level.

Accessory Sinus Disease in Children.—Vaile calls attention to the chronic head colds affecting so many children. Roentgen examination in all cases seen by him showed clouding of both antrums; some cases showed evidence of polypoid change and thickening of the mucous membrane. No cases of involvement of the frontal or sphenoid sinuses were found and few instances of ethmoiditis. At no time did the roentgen examination show evidence of empyema of the antrums. Two forms of treatment were employed: (*a*) palliative, and (*b*) surgical. Palliative treatment was tried in every case and given a fair trial, to be followed by surgical measures in case the conservative treatment failed. Treatment consisted of daily suction and exposures to radiant heat. The mother was instructed to instill 10 drops of a 25 per cent solution of mild silver protein into both nostrils twice daily, and was taught how to instruct the child in the proper use of the handkerchief. Following the suction the nose was sprayed with a 10 per cent mild silver protein or neosilvol solution. Radiant heat was supplied by means of the infra-red lamp. The time exposure and distance depended on the individual tolerance. When no improvement followed from two to three weeks of conservative treatment, surgical measures were resorted to. In all infants and in the majority of young children it was not necessary to resort to these. Suction treatments and radiant heat were sufficient to effect a cure in nearly all cases. Surgical treatment consisted in puncturing one or both antrums and in irrigation with physiologic solution of sodium chloride. Occasionally, good results were obtained by irrigating with 2 per cent mercurochrome, after washing with physiologic solution of sodium chloride. In no case did the treatment fail when the opening was large and remained patent for six weeks or more. The number of irrigations depended on the individual case. In many, the removal of the secretion by suction and the inflation of air into the sinuses was more effective than the wet treatments. During an acute exacerbation of the sinusitis all local treatments, other than the instillation of ephedrine (1 per cent) in liquid petrolatum into the nose several times daily, were strictly avoided.

Causative Factors in Eczema.—Burgess summarizes his review as follows: There is no one cause for eczema. The common factor in all eczematous individuals is an underlying hypersensitivity on the part of the skin and, granted this disposition, a legion of internal or external irritants may be exciting agents. The specific reaction of the skin to external irritants, the factor of alimentary toxins, and the significance of the diet as it pertains to carbohydrate and protein metabolism represent the more important aspects in the investigation of the eczematous individual.

Clinical Use of Ovary-Stimulating Hormone of Placenta.—Selected cases of ovarian hypofunction were placed under treatment by oral administration of an ovary-stimulating hormone of the placenta elaborated by Campbell and Collip. Definite results of a most encouraging character have been obtained in five cases of oligomenorrhea, in two cases manifesting distressing menopausal symptoms, and in two cases of dysmenorrhea.

Journal of Immunology, Baltimore

18: 87-168 (Feb.) 1930

*Inheritance and Racial Distribution of Agglutinable Properties of Human Blood. K. Landsteiner and P. Levine, New York.—p. 87.
Rate of Disappearance of Injected Horse Serum from Blood of Rabbit. H. R. Dean, N. E. Goldsworthy and C. Ten Broeck, Cambridge.—p. 95.
Skin Reactions Produced by Antihuman Serum. W. W. Redfern, Chicago.—p. 109.
Allergic Testis Reactions in Guinea-Pigs with Coccidioidal Granuloma. E. F. Hirsch and D. D'Andrea, Chicago.—p. 121.
*Hodgkin's Disease in Child: Case. E. S. L'Esperance, New York.—p. 127.
Pel Ebstein's Syndrome of Tuberculous Origin: Case. E. S. L'Esperance, New York.—p. 133.
Relationship of Two Hemotoxic Antigens in B. Welchii Growth Products. A. F. Schnayerson and S. L. Samuels, New York.—p. 141.
*Effect of Injection of Colloidal Substances on Experimental Typhus Fever. H. A. Reimann, Peiping, China.—p. 153.
Effect of Experimental Typhus Fever on B. Typhosus and Pneumococcus Agglutinins. H. A. Reimann and C. J. Wu, Peiping, China.—p. 159.

Inheritance and Racial Distribution of Agglutinable Properties of Human Blood.—The studies reported by Landsteiner and Levine substantiate the view that an agglutinable property of human blood detected by an agglutinin present in certain exceptional human serums ("extra agglutinin 1") is inherited and that its frequency shows a racial difference. Consequently it must be considered as a constitutional property. The same conclusion seems to hold for other properties of red cells demonstrable by atypical human serums. Evidence is presented to show that the qualities characterizing the two subgroups of group A are inherited.

Hodgkin's Disease in Child.—The results of a previous study made by L'Esperance of two cases of Hodgkin's disease seemed to constitute prima facie evidence of the probable etiologic significance of the avian tubercle bacillus in that disease. The present study confirms the previous observations and includes the successful isolation of an acid-fast bacillus possessing many of the cultural characters of the avian tubercle bacillus from chickens and guinea-pigs, which were infected with tissue from Hodgkin's granuloma.

Effect of Injection of Colloidal Substances on Experimental Typhus Fever.—Experiments made by Reimann show that the administration of india ink, sodium chaulmoograte, trypan blue and collargol before the inoculation of typhus virus in guinea-pigs usually prolongs the incubation time and shortens or diminishes the febrile reaction of typhus fever. No effect

was observed when these substances were injected during the incubation period or after the fever had begun. The effect of modifying the disease could be attributed to the fact that the endothelial cells were "blocked" with the injected colloidal substances and that the organisms of typhus fever were unable to enter the cells in their usual way and produce disease.

Journal of Pharmacol. & Exper. Therap., Baltimore

38: 145-246 (Feb.) 1930

Pharmacologic and Toxicologic Actions of Acriflavine. R. St. A. Heathcote and A. L. Urquhart, Cairo, Egypt.—p. 145.
*Toxicity of Lead Compounds. J. S. Buck and D. M. Kumro, Durham, N. C.—p. 161.
Action of Toxin of Crotalus Adamanteus on Blood Clotting. W. McG. Billing, Cincinnati.—p. 173.
Artificial Heart. O. S. Gibbs, Halifax, Nova Scotia.—p. 197.
Mercury Compounds: I. Effect of Acids, Bases, Salts and Blood Serum on Diffusion of Mercury Compounds in Vitro. F. H. L. Taylor and A. G. Young, Boston.—p. 217.
Liberation of Formaldehyde in Aqueous Humor of Eye After Administration of Hexamine (Urotropine). M. A. F. Sherif, Cambridge. —p. 231.
Estimation of Small Quantities of Strychnine in Biologic Material. J. T. Priestley, Rochester, Minn.—p. 241.

Toxicity of Lead Compounds.—Buck and Kumro investigated the toxic effect of certain groups of lead compounds and find that tetramethyl lead is of relatively low toxicity compared with other lead compounds. Investigations of the effect of tetramethyl lead on animal tumors are to be undertaken. It is suggested that the type of lead compound on which attention should be concentrated would possess a tetravalent lead atom (or atoms), methyl radicals, and one or more radicals carrying amino, hydroxyl or similar groups capable of combining with cell constituents. Such a compound is as yet unknown. The minimum lethal doses of certain organic lead compounds have been determined.

Michigan State M. Soc. Journal, Grand Rapids

29: 83-150 (Feb.) 1930

Syphilis of Upper Air Tract. J. F. Barnhill, Indianapolis.—p. 83.
Factors of Safety in Operations for Hyperthyroidism. C. D. Brooks, Detroit.—p. 89.
Problems Worthy of Consideration in Organization and Management of Community Hospitals. A. O. Hart and E. Hart, St. Johns.—p. 95.
Gallbladder Disease as Cause of Death. E. I. Carr, Lansing.—p. 102.
Light Therapy in Ophthalmology. R. J. Sisson, Detroit.—p. 106.
Status of Modern Surgery in Mastoid Infection. D. M. Campbell and J. M. Carter, Detroit.—p. 109.
Prevalence of Pulmonary Tuberculosis with Acute Onset. B. H. Douglas, Northville.—p. 112.
Modern Methods of Treating Prostatic Obstruction. V. C. Hunt, Rochester, Minn.—p. 116.
Spontaneous Entero-Anastomosis of Ileum and Jejunum: Case. P. Beregoff, Traverse City.—p. 121.

Military Surgeon, Washington, D. C.

66: 165-320 (Feb.) 1930

Development of Commercial Aeronautics and of Airplane Ambulance. L. H. Bauer.—p. 165.
Ocular Muscle Imbalance. F. H. Thorne.—p. 175.
Relation of Blood Transfusion to Disturbance of Blood Clot Formation. R. A. Kordenat.—p. 206.
Ten Interesting Pulmonic Cases. H. J. Hutter.—p. 215.
Tetanus Complicated by Measles: Case. C. E. High.—p. 223.
Manchineal Tree. J. M. Phalen.—p. 225.
Why Recent Graduates in Medicine Should Enter the Army. W. L. Wilson.—p. 228.
Gas Gangrene with Recovery: Case. J. Wallace.—p. 233.

Nebraska State M. Journal, Norfolk

15: 49-96 (Feb.) 1930

Résumé of Interpretations from 1,517 Operations on Thyroid Gland. C. A. Roeder, Omaha.—p. 49.
Goiter: Case Studies. A. Brown, Omaha.—p. 53.
Personal Experience with Spinal Anesthesia. J. W. Duncan, Omaha. —p. 56.
Mental Hygiene of Adolescence. M. J. Breuer, Lincoln.—p. 63.
Importance of Mental Hygiene in Child Care. H. M. Jahr, Omaha. —p. 68.
Nutrition as Factor in Child Hygiene. V. E. Levine, Omaha.—p. 71.
Management of Empyema: Intercostal Open Thoracotomy. C. Emerson, Lincoln.—p. 76.
Birth Control. E. C. Sage, Omaha.—p. 79.
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27: 91-188 (Feb.) 1930

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Relation of Trauma to Etiology of Inguinal Hernia. F. W. Shafer, Camden.—p. 111.
Prevention and Treatment of Chronic Otitis Media. E. L. Wood, Newark.—p. 114.
Acute Mastoiditis at Eight Weeks of Age. H. B. Silver, Newark. —p. 124.
Prevention and Treatment of So-Called Chronic Catarrhal Otitis Media. H. C. Barkhorn, Newark.—p. 118.
Attacks Against Salt-Free Diet. F. M. Allen, Morristown.—p. 126.
Blastomycosis with Pulmonary Involvement and Recovery. F. J. Altschul, Long Branch.—p. 132.
Incidence of Bacillus Abortus Agglutinins. R. A. Kilduffe, F. K. Fitzpatrick and E. D. Wilson, Atlantic City.—p. 138.
Problem Children. H. W. Potter, New York.—p. 139.

Ohio State M. Journal, Columbus

26: 193-288 (March 1) 1930

Diagnosis and Surgical Treatment of Tic Douloureux. C. E. Locke, Jr., Cleveland.—p. 213.
*Relation of Climate to Functional Disturbances in Body. C. A. Mills, Cincinnati.—p. 217.
Empyema of Antrum of Highmore. S. H. Large, Cleveland.—p. 219.
Brucella Abortus Infection in Children. G. M. Guest, Cincinnati.—p. 221.
Calcified Thyroid Cyst: Case. C. M. Rambo and L. M. Levi, Zanesville. —p. 230.

Relation of Climate to Functional Disturbances in Body.—Mills relates his observations of a condition that he encountered in Peiping, China, and also here which he believes to be closely related to hot weather. The symptoms are gastro-enteric disturbances, with spastic constipation more often than diarrhea, and low blood pressure. He concluded that low suprarenal function was the responsible factor, since hypo-suprarenalism would result in vasomotor relaxation, and would permit hypermotility or spasticity of the entire gastro-enteric tract. In attempting to complete the proof that the symptoms were due to low suprarenal function, he gave epinephrine by injection, sublingually, and by mouth. In the great majority of cases complete relief from the disturbing symptoms was obtained within three days after the epinephrine therapy was started. In most cases it was given in 30 per cent dextrose solution by mouth, 1 mg. of epinephrine half an hour before each meal. The gastro-enteric disturbances rapidly abated and the general state of the patient rapidly improved. The blood pressure rose slowly, not showing any considerable change for from two to three weeks.

Oklahoma State M. Assn. Journal, Muskogee

23: 41-68 (Feb.) 1930

Actinomycosis. P. B. Champlin, Enid.—p. 41.
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Injuries to Eye. H. F. Vandever, Enid.—p. 46.
One Reason Why Enterostomy May Not Function. F. A. Hudson, Enid.—p. 47.
Arthritis Deformans. W. R. Lamerton, Enid.—p. 48.
Auricular Fibrillation. W. P. Neilson, Enid.—p. 52.
Care of Patients Before, During and After Confinement. A. L. McInnis, Enid.—p. 54.
Pyelitis in Children. J. Feild, Enid.—p. 57.

Physical Therapeutics, New York

48: 57-112 (Feb.) 1930

Rôle of Physiotherapy in Treatment of Mental Disorders. H. A. Cotton, Trenton, N. J.—p. 57.
Treatment of Abnormal Cecum and Terminal Ileum. G. J. Ott, Boston. —p. 68.
Gastro-Intestinal Motor Insufficiency. C. F. Voyles, Indianapolis. —p. 75.
Critical Review of Year's Literature on Dietetics. J. W. Torbett, Marlin, Texas.—p. 80.
Phototoxis. F. F. de Courmelles, Paris.—p. 90.
Dilated Aorta Successfully Treated: Four Cases. W. B. Snow, New York.—p. 95.

West Virginia M. Journal, Charleston

26: 65-128 (Feb.) 1930

Bronchial Asthma. W. M. Sheppe, Wheeling.—p. 65.
Agglutinins for Brucella Abortus in Human Serums in West Virginia. R. S. Spray and B. W. Hess, Morgantown.—p. 71.
Some Aspects of Stomach Surgery. J. L. Ransohoff, Cincinnati.—p. 76.

Acetylsalicylic Acid in Treatment of Ringworm. A. P. Hudgins, Hinton.—p. 82.
Importance of County Society Secretary. H. M. Hall, Wheeling.—p. 83.
Early Diagnosis of Placenta Praevia. H. G. Steele, Bluefield.—p. 88.
Progress Made in Better Milk Supply for Bluefield. D. B. Lepper, Bluefield.—p. 91.
Apparatus for Indirect Blood Transfusion. E. H. Blossom and L. C. Davis, Fairmont.—p. 93.
Medical Defense Fund. C. H. Maxwell, Morgantown.—p. 93.
Air Inflation of Knee Joint as Therapeutic Measure. E. B. Henson, Charleston.—p. 96.
Renal Tuberculosis with Necropsy Findings: Case. G. G. Irwin, Charleston.—p. 97.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 227-268 (Feb. 8) 1930

Diagnosis and Treatment of Rheumatic Heart Disease in Early Stages. C. F. Coombs.—p. 227.
Diagnosis of Early Juvenile Rheumatism. R. Miller.—p. 230.
*Radium Teletherapy. F. R. Carling.—p. 232.
*Endarteritis Obliterans of Extremities. A. P. Cawadias.—p. 234.
*Pernicious Anemia. J. F. Wilkinson.—p. 236.
Quinine and Urethane Injection Cure of Hydrocele. F. C. Pybus.—p. 239.
*Cutaneous Sensitiveness to Scarlatinal Toxin in Pregnancy and Puerperium. H. Burt-White, L. Colebrook, G. Morgan, B. Jervis and G. Harre.—p. 240.
*Frequency of Streptococcus Pyogenes Infection in Puerperal Fever. L. Colebrook and R. Hare.—p. 241.
Gastrostaxis Following Burns. J. D'Ewart.—p. 242.
Anaphylaxis Following Injection of Pituitary Extract. J. Hasson.—p. 242.

Radium Teletherapy.—Carling describes the apparatus which was designed at the Westminster Hospital to meet the problem of making the most effective though economical use of the 4 Gm. of national radium that had been lent to the hospital for use as a "bomb," and, at the same time, of protecting from the emanations all persons except those actually under treatment.

Endarteritis Obliterans of Extremities.—Cawadias discusses the "synthetic" or "metabolic" conception of endarteritis obliterans, which is based on modern physiopathologic researches, is confirmed by clinical observations of the polyarterial syndromes, and has the merit of offering a sound scientific basis for the treatment of this condition. The diagnostic problem is important, since most cases of endarteritis obliterans are diagnosed as rheumatism, sciatica, varices and flatfoot. These errors will be avoided by bearing in mind the relative frequency of the arterial obstructions of the extremities at all ages and in all countries, and by exploring the circulation of the extremities with the oscillometer. The oscillometric method remains the most simple and the most precise diagnostic procedure, because radiology can give results only in the rare cases in which calcium deposits exist in the arterial wall, and radiography after injection of iodized oil is much more difficult in its application, does not give more precise information than the oscillometer, and is not always innocuous. Cawadias warns that in the intensive injection treatment of varices care must be taken not to mistake for real varices the venous dilatations encountered in cases of endarteritis obliterans, and which are provoked by the venous stasis frequent in this condition. Injection treatment of such "varicose veins" may lead to disaster. Interdiction of smoking is necessary, and there is always a relief in the symptoms of patients who give up smoking. Syphilis must be looked for, and even in doubtful cases treatment with mercury or arsphenamine must be instituted. Active foci of naso-oral infection should be treated. In a disease which so largely affects the vegetative nervous system the rôle of careful psychotherapy need hardly be emphasized. The treatment of the basic metabolic disturbances constitutes the principal element in the treatment of endarteritis obliterans and, provided an early diagnosis is made through the oscillometric exploration, gives striking results. The methods advocated—insulin, protein shock, iodized oil, spa treatment—frequently bring about a striking amelioration of the subjective symptoms. The second objective of the clinician in endarteritis obliterans consists in the diminution of the vascular spasm and the fostering of vasodilatation of the vessels of the limbs, so as to bring about as normal an arterial irrigation as possible. Among the physical therapeutic methods, the simplest consists in the application of warm foot-baths or radiant heat, but the best is diathermy. Massage is strictly contraindicated, as is also any undue strain (exercise), because these can only accentuate the spasmodic condition. Among surgical methods Leriche's operation—arterial perisympathectomy—which also enhances vasodilatation has given some good results, but must be applied only as a last resort.

Pernicious Anemia.—Wilkinson presents briefly the results obtained in a preliminary series of nine cases of pernicious anemia. These were divided into three groups, which were treated respectively with (*a*) normal gastric juice, (*b*) the raw fresh mucous membrane or muscular layer of hog stomachs, and (*c*) desiccated preparations from these two portions of the stomach of the hog. Normal gastric juice (from 150 to 200 cc. daily with meals) has given a definite improvement in the clinical condition, blood picture and reticulocyte response slightly better than is observed with a fresh liver diet under similar conditions. Hydrochloric acid and commercial pepsin alone have no effect in the improvement of the hematologic condition of pernicious anemia, nor are they essential for successful treatment with hog stomach. The mucous membrane and the muscular layer of the stomach of the hog are both active in the treatment of pernicious anemia. The results so far obtained show that this diet, weight for weight, is at least equal to or better than a liver diet. Similarly, desiccated preparations of these two separated portions of hog stomach are potent in the successful treatment of the disease. This form is convenient and easy to administer. Compared to liver, the results appear to be slightly better, and the improvement in the condition of the patients has been more rapid with hog stomach therapy. Glossitis and paresthesia, in particular, have been found to respond more readily. Eosinophilia occurs with this form of therapy as with liver.

Cutaneous Sensitiveness to Scarlatinal Toxin in Pregnancy and Puerperium.—The results obtained by Burt-White et al. show that in a series of 230 women giving positive Dick reactions in pregnancy, sixteen (6.9 per cent) experienced morbid puerperiums and in five a pure growth of *Streptococcus pyogenes* was isolated from the cervix; in one other case a pure growth of *S. pyogenes* was isolated from a breast abscess. In the Dick-negative group there were 770 women, and of these thirty-eight (4.9 per cent) experienced morbid puerperiums. In this Dick-negative group, more than three times larger than the Dick-positive group, two cases showed a few colonies of *S. pyogenes* in mixed culture. Considered purely from the point of view of the incidence of *S. pyogenes* infection, the results are as follows: in the Dick-positive group of women, six cases occurred among 230, or 2.6 per cent, and in the Dick-negative group, two cases out of 770, or 0.26 per cent. The Dick test was also applied to thirty-eight women during the puerperium—that is, either shortly after delivery or within from twenty-four to thirty-six hours of the onset of fever. These were cases not included in the larger investigation. Since many of the women were already febrile when the Dick test was carried out, the incidence of "morbidity" in the positive and negative groups is of no significance. Of the thirty-eight patients, eight gave a positive Dick reaction, and of these five were "morbid." Bacteriologic investigation of these morbid cases showed only one infection (that is, 1 in 5) by hemolytic streptococci—a case of slight uterine sepsis. Of the thirty patients with a negative Dick reaction, twenty were febrile and were studied bacteriologically. Three cases (that is, 1 in 6.6) showed infection by hemolytic streptococci—two being mild local infections and the third a moderately severe case in which the fatal result was due chiefly to secondary hemorrhage. The Dick test was repeated in about twenty-six cases in order to determine whether the skin reaction to streptococcal toxin changed from time to time, as asserted by Weiss. Fifteen patients were tested before labor and once during the puerperium. Four were tested before labor and twice during the puerperium. Seven were tested twice during the puerperium. Ten of the patients tested were Dick-positive, sixteen of them Dick-negative. In only one case was there a different

reaction on retesting—a positive reaction before labor changing to a negative one after labor in a patient whose puerperium was afebrile.

Frequency of Streptococcus Pyogenes Infection in Puerperal Fever.—Colebrook and Hare conclude from their study that infection by *Streptococcus pyogenes* is a comparatively infrequent cause of the minor febrile disturbances of the puerperium. Among 1,626 deliveries, of which 134 were febrile, there were only ten cases of infection by *S. pyogenes*. Much more commonly these were associated with infection by *B. coli*, diphtheroid bacilli (minute colonies on blood agar), nonhemolytic streptococci, and various unclassified gram-negative organisms. The patients infected with *S. pyogenes* did not all show a clinically severe course. Only one died (from secondary hemorrhage), and only one other gave rise to any anxiety—chiefly on account of her mental condition. This was the only case of septicemia. The remaining eight cases were all mild infections; two of the patients were scarcely ill at all. It would seem that though the presence of hemolytic streptococci in a culture from the uterus—especially if it is an abundant, nearly pure growth—should be looked on as potentially serious, it does not necessarily justify a grave prognosis. Secondly, though strict isolation of the ten patients who harbored hemolytic streptococci was impossible, the infection was not transferred—except possibly in one instance—to another patient in the hospital.

Lancet, London

1: 277-330 (Feb. 8) 1930

*Surgical Treatment of Carcinoma of Cervix. V. Bonney.—p. 277.
Treatment of Intractable Discharge from Nasal Sinuses. A. L. Yates.—p. 282.
*Alkalosis in Congenital Hypertrophic Pyloric Stenosis. M. Maizels, C. B. McArthur and W. W. Payne.—p. 286.
*Leukemia Following Trauma. S. C. Lewsen.—p. 288.
*Relation of Carotin to Vitamin A. E. M. Hume and I. Smedley-MacLean.—p. 290.
*Liver Therapy in Anemia of Alimentary Origin. D. T. Davies.—p. 292.
*Anesthesia for Thoracoplasty in Pulmonary Tuberculosis. I. W. Magill.—p. 295.
Purpura as Sole Sign in Case of Meningococcal Septicemia. J. A. G. Burton and D. K. M. Chalmers.—p. 296.
*Sublingual Dermoids. R. Warren and N. C. Cooper.—p. 297.
Multiple Carcinomas of Skin in Chimney Sweep. W. D. Bedford.—p. 297.

Surgical Treatment of Carcinoma of Cervix.—Bonney reviews the results of 284 Wertheim operations which he had performed by the end of 1924. These patients were therefore available for examination on the basis of five years' freedom from recurrence. Forty-seven patients died of the operation; 107 had a recurrence before five years; twelve were lost sight of before five years; eight died of other diseases before five years, and 110 were well at the end of five years.

Alkalosis in Congenital Hypertrophic Pyloric Stenosis.—Of thirty-four cases of congenital pyloric stenosis analyzed by Maizels et al., twenty-eight showed an increased bicarbonate reserve at some period before operation. In no uncomplicated case was acidosis present. On admission the plasma bicarbonate was found to be above 0.04 molar in ten of the thirty-four cases. The p_H of the blood before operation was usually increased, though not to the extent that might have been expected from the bicarbonate level. The chlorides, in general, varied inversely as the bicarbonate. The sum of chloride and bicarbonate molarities was reduced, patients with marked alkalosis showing as a rule the greatest reduction and patients with moderate alkalosis a slight reduction. It was noted that the total molarity was lower in patients with a normal bicarbonate reserve than in those with slight alkalosis. Copious doses of physiologic solution of sodium chloride were given in all the cases. In only seven of these has more than one preoperation record been made. Four cases show a rise of plasma chloride, but two show a definite fall in chloride, in spite of the subcutaneous saline injections. The urine is alkaline and almost chloride-free. Ketonuria is rare. Marked improvement follows the administration of saline infusions in most cases.

Leukemia Following Trauma.—In the case reported by Lewsen it seemed that an injury of the crest of the tibia might have been an etiologic factor in the condition. The patient's health before the accidents was absolutely beyond suspicion, and in the absence of any symptoms, however slight, it is difficult to believe that he had leukemia before the first blow. Admittedly, however, absence of the illness could have been indisputably established only by a full physical examination, including an estimate of the size of the spleen and a blood survey immediately before the trauma. It is equally true that no such examination was ever necessary on account of his excellent health. Forty cases are tabulated. The literature contains about sixty cases in all, but the evidence for the remainder is unconvincing. It appears from the table that the great majority of the patients are males (twenty-seven out of thirty-one). The average age is 38. No history of familial tendency is found, and the personal history is usually clear. A history of malaria is recorded in two cases. The type of trauma may be classified as (*a*) a blow to the long bones or ribs which may or may not result in a fracture; (*b*) a blow in the region of the spleen, sometimes rupturing that organ; (*c*) a general severe shaking. The trauma may be repeated. In two cases symptoms of leukemia developed after the third injury, and in another case leukemia developed after the first blow, the second blow causing an exacerbation which resulted in death three weeks afterward. The diagnosis was established from a few days to four years after the injury. The leukemia was always of the myeloid variety except in one doubtful instance. Death followed in twenty-two cases, from three weeks to five years after the trauma (or last trauma). Pain over the site of the trauma was a feature in many cases, often throughout the course of the illness.

Relation of Carotin to Vitamin A.—Experiments made by Hume and Smedley-MacLean failed to give any evidence that would decide the relationship between the yellow pigment carotin and the substance responsible for the biologic activity in vitamin A of liver extracts. It cannot yet be decided whether carotin acts as a provitamin, as Moore has suggested, or whether carotin from all sources is always accompanied by a constant percentage of impurity, which up to the present has defied all methods to separate it.

Liver Therapy in Anemia of Alimentary Origin.—The details of five cases, four of carcinoma of the stomach and one probably of the pancreas, in which liver therapy was given are reported by Davies. In all the following features were present: a lemon tinted skin, symptoms of anemia, and achlorhydria. The response to liver therapy seems to be comparable to that of the primary anemia. Two conclusions are drawn by Davies: first, improvement through liver therapy in cases of anemia associated with achlorhydria is not diagnostic of pernicious anemia; second, liver therapy may prove of therapeutic value in gastric conditions, in preoperative and postoperative periods, in which there is an anemia associated with an achlorhydria, although the blood count is not of the pernicious or primary type.

Anesthesia for Thoracoplasty in Pulmonary Tuberculosis.—Magill advocates nitrous oxide and oxygen anesthesia combined with block of the intercostal nerves as soon as the ribs are exposed. It has been observed that there is less liability to shock when the ribs are divided after nerve block than when the injection is omitted. In 101 thoracoplasties, representing 202 operations performed on tuberculous patients, the operative mortality was five, all the deaths occurring in the first three weeks after operation. One patient died on the third day from pulmonary embolism; one on the sixth day from acute spread of the disease on the opposite side; one on the twentieth day from tuberculous pneumonia in the opposite lung; one on the eighth day after the second stage from syncope, and the last from tuberculous pneumonia on the fourth day. Magill has also used ethylene instead of nitrous oxide with a view to obtaining better results. So far, he has not found ethylene to be vastly superior to nitrous oxide. Anesthesia can be maintained with a greater percentage of oxygen when ethylene is used—an undoubted advantage. But the objectionable smell of the gas and its explosive qualities must be considered.

Sublingual Dermoids.—Warren and Cooper removed such a cyst from a boy, aged 17. The cyst was ovoid and about 2½ by 2 inches in size. The wall was thin and lined with epithelium, and the cyst contained the usual porridge-like, acid-smelling material found in dermoids, but without any hairs.

Bulletins et Mém. de la Soc. des Chirurgiens de Paris

21: 673-720 (Nov. 15) 1929

Tuberculosis of Knee Joint: Treatment by Bone Grafts. Dupuy de Frenelle.—p. 674.
Surgery in Emphysema. Bossy.—p. 690.
*Topographic Diagnosis in Acute Appendicitis. D. A. Pasqualis.—p. 694.
*Surgical Treatment of Bilateral Nephrolithiasis. S. de Dziembowski.—p. 698.
Painful Sesamoid Bones of Great Toes. A. Trèves.—p. 710.
*Gastro-Enterostomy with Surgical Diathermy. Victor-Pauchet, Le Gac and G. Luquet.—p. 712.
Fracture of Ankle with Outward Dislocation of Foot and Resulting Protrusion of Inner Malleolus Through Wound. P. Muller.—p. 714.
Surgery of Hilus of Lung. Petit de la Villeon.—p. 718.

Topographic Diagnosis in Acute Appendicitis.—Pasqualis claims that he can determine the state of the appendix in acute appendicitis by subtraction of the axillary from the rectal temperature. In cases in which the difference between the two is more than one degree, danger of generalized peritonitis is imminent. A difference of less than one degree corresponds to a subserous retrocecal appendix. Ten cases are reported illustrating this theory.

Surgical Treatment of Bilateral Nephrolithiasis.—On the basis of his personal experience extending over a period of fifteen years, de Dziembowski states that the frequency of occurrence of bilateral nephrolithiasis is about 10 per cent of all cases of nephrolithiasis. The latency of the disease is one of its characteristics and it may often be revealed only by an ensuing complication. Roentgen examination is essential in all cases of pyuria of long duration. According to the author, operation is indicated only if severe pain is experienced or if complications are present, such as anuria, infection coincident with a high temperature, or hemorrhage. Bilateral intervention should be made only in simple cases and if the calculi are in the kidney pelvis and have not been of long duration. A one-stage operation can be done in young subjects who have no concurrent infection. The side least involved should be operated on first. Two cases are reported in which this operation was done successfully. In cases in which a two-stage intervention is indicated, the interval may vary from two weeks to one year. De Dziembowski points to the frequent unfavorable outcome of surgical intervention in all such cases and favors conservative treatment.

Gastro-Enterostomy with Surgical Diathermy.—Victor-Pauchet et al. report favorable results with the use of this technic in three patients, two of whom had cancer of the stomach. They did not use any clamps and there was no need to check bleeding. Only the muscles of the stomach and jejunum were cut and one row of sutures was placed. The mucosa opened spontaneously several hours after the operation or the next day. The only difficulty according to the authors is the determination of the degree of heat necessary to bring about the separation of the mucosa.

Presse Médicale, Paris

38: 49-64 (Jan. 11) 1930

*Roentgenotherapy of Suprarenal Region. L. Langeron and R. Desplats.—p. 49.
Enucleation of the Atlas in Nasopharyngeal Torticollis. P. Grisel.—p. 50.
*Diffuse Indurating Myocarditis and Syphilis. N. L. Chaniotis.—p. 53.

Roentgenotherapy of Suprarenal Region.—Langeron and Desplats found that, in the treatment of vasomotor disorders in the lower extremities, roentgen irradiation has a beneficial effect. During this treatment they observed a calorific increase which was conducive to an increased capillary circulation of the arteries, although it did not influence the result of oscillometric tests for arterial circulation. The most important almost constant effect of this therapy is the suppression of pain after a short period of exacerbation. The authors were able to observe several patients for more than one year after the treatment in whom relief had persisted. Under the influence of roentgen irradiation spasmodic symptoms likewise disappeared and intermittent claudication was therefore ameliorated, although the arterial tension could not be lowered. Symptoms of erythromelalgia and of trophic disorders showed great improvement. These symptoms are, in general, linked to vasoconstrictor disorders, but they can also be caused by vasodilator influences. In the interpretation of the clinical observations the authors point to the abundance of sympathetic nerve fibers in the suprarenal region. The reaction of the sympathetic nerve is known to be automatically inverse to irritative influences, but under pathologic conditions paradoxic reflex actions may create a vicious circle leading to aggravation of the condition. Roentgen irradiation apparently restores normal reflex action. So far it is impossible to judge to what extent this action is allied to stimulation of the secretion of the suprarenals. According to the authors, inhibition of pain favors the hypothesis that the sympathetic nerve fibers are to a great measure responsible for the favorable results.

Diffuse Indurating Myocarditis and Syphilis.—On the basis of the clinical history in one patient, aged 47, and a summary of the literature, Chaniotis points to elimination of other diseases as a guide in diagnosis, as the symptomatology of this type of myocarditis is not well known. In this case primary syphilitic myocarditis may be incriminated as having caused the fatal outcome. Destruction of the heart muscle by the spirochete had been arrested by antisyphilitic treatment. However, the remaining tissue was overstrained and eventually could not carry on the entire function. The author emphasizes the differentiation of primary from secondary syphilitic myocarditis with vascular lesions.

38: 65-80 (Jan. 15) 1930

Catarrhal Gastritis and Pyloric Pseudostenosis in Infants. E. Terrien.—p. 65.
*Etiology of Cervical Ribs in Relation to Rickets and Osteomalacia. J. A. Mathez.—p. 67.
Effect of Gold Salts in Pulmonary Tuberculosis. R. Mignot.—p. 68.

Etiology of Cervical Ribs in Relation to Rickets and Osteomalacia.—Mathez's patient, aged 43, was suffering from pain in the bones coincident with symptoms of intensive vertigo. She had been operated on for a supernumerary rib about ten years previously but roentgenograms from that time could not be found. Roentgenograms which had been taken several years later showed that there were marked areas of decalcification, especially in the bones of the feet. Ingestion of antirachitic preparations for a period of more than six months resulted in relief from the vertigo, but the entire sacral region, especially the crest of the ilium, was sensitive, although no symptoms of inflammation were noted. However, after continued medication this condition was likewise relieved. The author points out that the patient was in easy financial circumstances and that insufficient nutrition or lack of sunlight could not be blamed for the symptoms of osteomalacia. According to Mathez, the relation between rickets, osteomalacia and the supernumerary rib was clearly evident. The patient failed to assimilate vitamins from the food but reacted rapidly to medication with antirachitic vitamin D preparations.

Schweizerische medizinische Wochenschrift, Basel

60: 73-92 (Jan. 25) 1930

Storage of Copper and Silver in Eye, Liver, Spleen and Kidney as Symptom of Pseudosclerosis. A. Vogt.—p. 73.
Significance and Mode of Action of Vitamins. A. Hottinger.—p. 78.
*First Aid in Injuries Caused by Electric Current. D. Pometta.—p. 82.
Failure of Actinotherapy in Generalized Actinomycosis: Case. R. H. Kummer and M. Wasserfallen.—p. 83.

First Aid in Injuries Caused by Electric Current.—Pometta advises that a person injured by an electric current be removed at once from the danger zone in order to be protected against further injuries. He should be placed in the proper position and breathing exercises begun immediately. It is advisable to remove the clothing from the upper part of the body. However, care should be taken that the body is warm. When the physician arrives the respiratory exercises should not be interrupted in order to permit a diagnosis. He should immediately give a subcutaneous injection of a restorative medicine. Then an examination should be made in order to determine whether intravenous or intracardiac injection is necessary. Concerning the artificial respiration, the author states that manually performed exercises are better than those that are done with apparatuses. However, if the persons who perform the exercises become too tired, an apparatus should be employed. Artificial respiration has to be continued for at least four or five hours. Good results have also been obtained from the breathing of carbon dioxide.

Policlinico, Rome

37: 1-48 (Jan. 1) 1930. Medical Section

*Pyelitic Recurrent Fever and Bronchitic Recurrent Fever. A. Nazari. —p. 1.
Acute Influenzal Polyneuritis. G. Dalla Torre and A. Chinaglia.—p. 9.
Gonococcic Septicemia: Case. R. Rossoni.—p. 19.
Pathologic Anatomy of a Case of General Intoxication from Favus. F. Guccione.—p. 32.

Pyelitic and Bronchitic Recurrent Fever.—Nazari's second case shows that inflammation of the urinary tract (pyelitis), as well as inflammation of the respiratory tract (bronchitis), may present a cyclic course with recurrent febrile attacks. Although this second case was more complex than the first, owing to the presence of pneumoconiotic sclerotic chronic inflammatory changes, the clinical picture and the anatomicopathologic changes justify the belief that the recurrent febrile attacks depend solely on the recrudescence of the chronic bronchitic catarrhal inflammatory process due to causes difficult to determine, just as the causes of recurrent fever in many different diseases are difficult to explain.

37: 45-84 (Jan. 13) 1930. Practical Section

*Anesthesia of Frankenhäuser's Ganglion and Internal Pudendal Nerve in Gynecologic Practice. M. Arcieri.—p. 45.
Is Collapsotherapy Feasible in Ambulatory Practice? G. Fernandez.—p. 50.
Differential Diagnosis of Typhoid and Landouzy's Typhobacillosis. I. Nuvoli.—p. 52.
Observations on Sainton and Schulmann Test for Diagnosis of Cerebrospinal Meningitis. A. Andreotti.—p. 56.

Anesthesia of Frankenhäuser's Ganglion and Internal Pudendal Nerve in Gynecologic Practice.—This form of anesthesia, Arcieri states, is accomplished with a 1 per cent solution of procaine hydrochloride, and is sufficient for the performance of all operations that are usually done on the cervix, the vagina and the perineum. The technic is simple and the results are good. Eighteen interventions carried out with this anesthesia are reported and in all cases insensibility was complete. There were no untoward incidents either during or after the intervention, whence it appears that the method is to be recommended in minor gynecologic operations by way of the vagina, especially in private practice.

Rivista di Patologia e Clin. della Tubercolosi, Bologna

3: 1005-1076 (Dec. 31) 1929

*Probable Causes of More Frequent Meningeal Localization of Tuberculosis in Childhood. A. Robles.—p. 1005.
*Can Tuberculous Corticopleuritis Arise in Consequence of Surgical Interventions? S. Mancini.—p. 1019.
Roentgen and Semeiotic Observations on Pulmonary Cavities During Collapsotherapy. S. Aloigi.—p. 1039.
*Preventive Antituberculosis Vaccination by Italian Method. V. Lubich. —p. 1043.
*Arterial Tension in Pulmonary Tuberculosis. A. Casella.—p. 1047.

Probable Causes of More Frequent Meningeal Localization of Tuberculosis in Childhood.—Robles does not wish to exclude the possibility of other factors, such, for example, as the influence of elements of the trophophagocytic or reticulo-endothelial apparatus, but points out that her researches have demonstrated frankly the prevalence of meningeal and cortical capillaries of a smaller caliber in the child than in the adult, which fact she thinks may be invoked in explanation of the strange, diverse tropism of the tubercle bacillus for the brain, in relation to the age of the patient.

Can Tuberculous Corticopleuritis Arise in Consequence of Surgical Interventions?—Mancini calls attention to the frequency with which corticopleuritis develops following surgical interventions, and holds that it is of a tuberculous nature. He presents also the more recent conceptions of the genesis of tuberculous corticopleuritis: namely, that a perifocal inflammation is its anatomic basis, and finally treats the question of determining causes of a specific biologic nature, although due to aspecific influences, in which he includes also operative interventions.

Preventive Antituberculosis Vaccination by the Maragliano Method.—Lubich gives a brief account of three personal cases in which preventive antituberculosis vaccination was done with the Maragliano vaccine, and in which the allergy that developed as a result of such vaccination showed the efficacy of vaccines composed of killed bacilli.

Arterial Tension in Pulmonary Tuberculosis.—Casella studied arterial tension in fifty patients with pulmonary tuberculosis in various stages of the disease, some patients being followed up for a long period. He found that usually low blood pressure is associated with tuberculosis and that in such cases the prognosis is unfavorable. In the rare cases in which he found high arterial pressure, bacillary nephritis and cardiac hypertrophy were coexistent.

Archivos Latino-Am. de Pediatría, Buenos Aires

23: 737-815 (Oct.) 1929. Partial Index

*Lipoid Nephrosis Associated with Postscarlatinal Chronic Nephritis. L. Morquio.—p. 737.
*Vitamin D and Craniotabes: Necessity of Biologic Control of Commercial Preparations Containing Vitamins. J. P. Garrahan and J. C. Traversaro.—p. 749.
*Anergy to Tuberculin in Pneumonia. F. Nicola Reyes.—p. 759.

Lipoid Nephrosis Associated with Postscarlatinal Chronic Nephritis.—Morquio recognizes three forms of lipoid nephrosis. The first is the pure form, with a type of primary chronic nephritis characterized by the presence of insidious anasarca and albuminuria. The second form is nephrosis associated with symptoms of nephritis. Nephrosis of this type either follows slight and transient infections of the kidney or appears as a glomerulonephritis during the evolution of nephrosis. In these cases the nephrotic picture is the predominant one, and treatment should be directed to correct it. The third form is the association of chronic nephritis with nephrosis, either chronic nephritis developing from a nephrotic condition or (as it is more generally observed) nephrotic degeneration developing in the kidney, which is already the seat of chronic inflammation. The author reports the case of a patient, aged 10, who belongs to the third type. As a complication of scarlet fever when she was 6 years old, the patient had an acute nephritis, which became chronic with periods of aggravation and amelioration of symptoms (edema and albuminuria). During one of these periods the child had a pneumococcal peritonitis, for which she underwent a successful operation. She also presented a syndrome characterized by an increase of the cholesterol content of the blood and a decrease of the protein substances. Birefringent crystals were found in the urine. Thyroid extract, serum of the renal vein of a goat, and antisyphilitic treatment were given. The salt-free diet which the child had received for four years without good results was changed to a nitrogenous diet. Though the general condition of the child improved, the renal lesion did not change. The author believes that in this case nephrosis developed as a complication of a chronic nephritis with tendency to sclerosis, since the child had azotemia and slight hypertension.

Vitamin D and Craniotabes: Necessity of Biologic Control of Commercial Preparations Containing Vitamins.—Garrahan and Traversaro observed the effects that four different commercial preparations containing viosterol had on craniotabes in sixteen infants, aged from 11 days to 5 months. Four infants became worse, nine continued in the same condition, and three improved (though in the last mentioned, a spontaneous recovery was possible). In the authors' cases neither immediate recovery from craniotabes nor rapid ossification of the fontanels (which some authors have noted following the administration of viosterol) was observed. The authors observed also the effects that one of the same preparations of viosterol had on rickets, in a child aged 21 months. In this case also clinical improvement was not observed, and after the treatment roentgenograms still showed the lesions characteristic of rickets. They emphasize the importance that the problem of the evaluation of preparations containing vitamins has for pediatricians, and they indicate the necessity of biologic control and standardization of the preparations before they are permitted to be marketed.

Anergy to Tuberculin in Pneumonia.—Nicola Reyes states that during the evolution of pneumonia there is a condition of complete anergy to tuberculin, and that allergy returns slowly as the congestive process of the lung subsides. The

tuberculin reactions of three tuberculous children, aged from 5 to 8 years, respectively, who had pneumonia were negative, and during convalescence they became positive. One child, with positive skin reactions before pneumonia, gave negative reactions at the crisis of the disease; the skin reaction was positive forty-eight hours later (when the convalescence began), and it was intensely positive two days later. In one of the patients the author observed secondary positive reactions at the scarifications of the second and of the third skin tests when the fourth skin test was made and resulted positively. In these tuberculous patients, pneumonia had a normal evolution, and they recovered clinically and roentgenologically from it. The author considers pneumonia an anergy-producing disease, as he says that in his cases pneumonia was not complicating any other condition which might have caused anergy of other origin to be suspected.

Semana Médica, Buenos Aires

36: 1685-1748 (Dec. 12) 1929

*Diabetes of Syphilitic Origin: Seven Cases. P. Heredia.—p. 1688.
Acute Diabetic Cataract: Acute Juvenile Cataract: Two Cases. P. B. Landabure and M. Lagleyze.—p. 1695.
*Hydatid Cyst of Lung Opening into Pleura: Spontaneous Hydatid Pyopneumothorax. R. Rodriguez Villegas.—p. 1697.
Fibrosarcoma of Retroperitoneal Connective Tissue: Case. A. Althabe and G. di Paola.—p. 1705.
Electrotherapy in Gynecology. C. M. Pérez Carlevaro.—p. 1707.
Comparison of Methods for Determination of Uric Acid in Blood and in Plasma. R. A. Trelles and R. Ferramola.—p. 1711.
Importance of Hydrogen Ion Concentration in Precipitation of Water-Soluble Vitamins. M. J. Otero.—p. 1712.
Effect of Morphine Hydrochloride on Animals Inoculated with Tetanus Toxin or Diphtheria Toxin as Well as in Anaphylactic Shock. L. G. Gret.—p. 1715.
Peripheral Facial Paralysis: Kinesitherapy: Ten Cases. O. C. Fernández.—p. 1718.
Injuries of Hand Caused by Bread Making Machine: Case with Complication of Gangrene Necessitating Amputation of Arm. R. C. Ferrari. —p. 1724.
Are Progressive and Recurrent Dermatofibromas of the Same Nature as Dermatoneuromas? J. Darier.—p. 1735.

Diabetes of Syphilitic Origin: Seven Cases.—Heredia states that diabetes may appear as a complication of syphilis in any stage of the disease, but more frequently it appears associated with tertiary syphilis. Syphilitic diabetes has no special characteristics which permit its differentiation from ordinary diabetes. From his studies on seven patients, aged from 21 to 65 years, with syphilitic diabetes, the author concludes that the statement that diabetes has a syphilitic origin should be based on the history of the patient and on the clinical data given by the patient. Either the presence of syphilis or a positive Wassermann reaction in a diabetic patient have diagnostic value. The improvement of diabetes under antisyphilitic treatment is the criterion of most value, but the failure of the treatment to improve or cure diabetes does not nullify the rôle that in the individual case syphilis plays in diabetes. Syphilis is not the usual cause of diabetes, though it may produce it with relative frequency. Diabetic patients with a history of syphilis, or with lesions which may arouse the suspicion of coexistent syphilis, should be given antisyphilitic treatment. In some cases, antisyphilitic treatment is followed by recovery of the patient. In all patients in whom indefinite symptoms or syndromes appear, glycosuria and hyperglycemia should be sought for, since syphilitic diabetes may present a varied symptomatology.

Hydatid Cyst of Lung: Spontaneous Hydatid Pyopneumothorax.—Rodríguez Villegas reports a case of spontaneous rupture of an hydatid cyst of the lung into the pleura, with pyopneumothorax and secondary pyopneumocyst, in a patient aged 39. On admission, the patient stated that some days before he had had an intense pain at the base of the left lung. This pain marked the beginning of his serious condition. There was a large pleural effusion under great pressure. In two punctures, at two day intervals, 5,000 cc. of fluid was aspirated. The author based the diagnosis on the symptoms and history of the patient (he had lived in a region in which hydatid disease was prevalent and his mother had undergone an operation for hydatid cyst). The patient had a positive Cassoni reaction. The author illustrates his paper with three of the roentgenograms taken. The first and second (anteroposterior and lateral views) were taken at the same time. In the first of these pictures the hydatid cyst and pyopneumothorax were observed. In the second one, the cyst exhibited its well delineated contour. The third roentgenogram (anteroposterior view) was taken several days after the puncture. The cyst walls were contracted. At operation the visceral and parietal pleura appeared to be covered by a coarse gray membrane; the lung had been forced between the heart and the mediastinum. After the removal of a piece of this membrane, a small opening (obstructed by part of the primitive membrane) was found. When this opening was enlarged, the cystic cavity was very large. The patient died three months after operation from chronic sepsis.

Archiv für klinische Chirurgie, Berlin

156: 417-586 (Dec. 10) 1929

*External Choledochoduodenostomy in Treatment of Cholelithiasis. H. Finsterer.—p. 417.
*Fractures of Patella: Their Complications, Especially Arthritis Deformans. M. J. Madlener and H. R. Paas.—p. 445.
*Surgical Treatment of Luxations of Patella. G. Janz.—p. 463.
*Treatment of Suppurative (Purulent) Meningitis. F. Starlinger.—p. 474.
Pathogenesis and Treatment of Tropical Ulcers. A. J. Ssoson-Jaroschewitsch.—p. 495.
*Treatment of Colitis and Pericolitis by Entero-Anastomosis. G. Garry and A. Druckmann.—p. 524.
Hernias of Abdominal Wall as a Symptom of the Anatomic Constitution. N. M. Janow.—p. 533.
Experimental Pathology of Suprarenals Resulting from Intravenous Injection of Nicotine. A. S. Kosdoba.—p. 550.
Significance of Changes in Intervertebral Disks as Result of Age in Their Pathology. H. Uebermuth.—p. 567.
Indications for Operation in Exophthalmic Goiter: Preoperative Treatment and Ultimate Results. N. von Hedry.—p. 578.
*Value of Zinc Sulphate in Treatment of Tuberculosis of Joints. N. von Hedry.—p. 583.

Treatment of Cholelithiasis.—Finsterer regards the drainage method of Kehr the least efficient treatment of obstruction due to gallstones and of cholangeitis not alone for immediate but also for permanent results. It is essential to have a perfect and continuous flow of bile into the duodenum. This may be accomplished by effective dilation of the sphincter of Oddi, by slitting or by choledochoduodenostomy, preferably by way of the supraduodenal segment of the gallbladder.

Fractures of Patella.—Among sixty-one fractures of the patella, Madlener and Paas found eleven direct and three indirect fractures. In the remaining cases an exact determination of the nature of the fracture could not be determined, but it is believed that a combination of both direct and indirect causes was operative. Eighteen fractures were treated conservatively, there being present only a slight diastasis and unimpeded extension. In forty-three cases a high degree of diastasis of the fragments and feeble powers of extension necessitated surgical treatment. These cases showed the best end-results. The function of the joint was good despite the presence of deformation of the patella, often of high degree. Among thirty-one patients reexamined later there were found fifteen cases of arthritis deformans. No evidence was obtained that this stood in any relationship to the nature or cause of the fracture or to the patellar deformity. Advanced age of the patient and a longer time period since the accident were frequently associated with arthritis. In the cases treated surgically, with wire sutures, arthritis occurred most often. The degree of arthritis was never such as to interfere with free motion in the joint.

Treatment of Dislocation of Patella.—Research in the literature and personal experience have convinced Janz that a single recurrence of the dislocation should be treated surgically. No attention need be given to the often resulting genu valgum. The aim should be to redirect the pull of the quadriceps laterally, opening the knee joint but without attempting to touch the bones or the joint surfaces, no matter what their condition may be.

Treatment of Purulent Meningitis.—Starlinger regards as useless the administration of large amounts of methenamine in this condition. Even rather large doses proved entirely ineffective in animal experiments performed by him. A combination of a 40 per cent solution of methenamine administered

suboccipitally, and a 10 per cent solution administered intravenously, with cisternal puncture, was effective in only one of four experiments in which a streptococcus meningitis was proved to exist. In two cases sterile cerebrospinal fluid was noted at necropsy. Eight animals died as the result of a very severe meningitis with pyocephalus, whether treated—but probably not sufficiently—or not. No bad results from this treatment were noted in any case. He believes that his results justify the conclusion that the proposed method of treatment is indicated in human beings.

Entero-Anastomosis for Colitis and Pericolitis.—Clinical experience with thirty cases of this sort has convinced Garry and Druckmann that entero-anastomosis is the best method of treatment to be employed in these cases. Seventeen of twenty-five cases of colitis under control showed cure in nine; improvement in four, and no improvement in four. Eleven of thirteen patients with pericolitis were cured; one was improved and one remained unimproved. In 70 per cent of the cases the result was immediate, so far as cure was concerned; in the remaining 30 per cent, the good result was not noted for from three to twelve months after operation. In thirty-three cases the anastomosis was between the ileum and the transverse colon; in two cases, between the ileum and the sigmoid. The results were good as long as five years after the operation. The type of operation was determined by the extent of the inflammatory process. In thirty-three cases the disease was localized in the cecum or ascending colon. Here the ileocolonic anastomosis was done. In the remaining five cases the entire large bowel was affected and an ileosigmoid anastomosis was made. In only one case, a severe colitis with symptoms of infection and intoxication, was the diseased intestine excluded entirely. The authors stress the fact that a long loop of small intestine should not remain between the anastomosis and the cecum. Such a loop should always be exsected in order to avoid stasis. This operation has been followed by the best results in every case, far better results than could be obtained by any other surgical procedure. Only three of the thirty-eight patients died, each of peritonitis. The cause of the peritonitis could not be determined.

Use of Zinc Sulphate in Joint Tuberculosis.—Von Hedry reports five cases of tuberculosis of the elbow and wrist joints in evidence of the value of intra-articular injections of 2 or 3 cc. of a 10 per cent zinc sulphate solution in glycerin. The injection was made under roentgen control and through the fistulous tract, if one was present. It was repeated after fourteen days. In some cases as many as six injections had to be made. Healing resulted in every case.

156: 587-805 (Jan. 11) 1930

Significance of Anaerobic Bacilli in Causing Perforative Peritonitis in Diseases of the Bowel and Its Appendages. W. Löhr.—p. 587.
Bacteriology of Accidental Wounds. L. Sas.—p. 673.
*Treatment of Accidental Wounds. L. Sas.—p. 705.
*Experimental and Clinical Observations on Injection Treatment of Varicose Veins. E. Schwarz and M. Ratschow.—p. 720.
Duodenectomy: New Method of Transplantation of Common Bile Duct and Pancreatic Duct. K. Blond.—p. 736.
*Free Autoplastic Transplantation of Bone, Especially of Small Bone Fragments. S. I. Kartaschew.—p. 758.

Treatment of Accidental Wounds.—Sas is convinced that when the resistance of an injured tissue is normal, normal wound healing will result, even in the presence of pathogenic organisms. Hence, wounds without extensive tissue injury should be treated aseptically and sutured at once. Any wound causing even severe tissue injury should be treated antiseptically, provided the treatment can be instituted within one-half hour after the occurrence of the injury. If the bacteria have entered the depth of the wound, which in Sas's experience occurs within a half hour after the wound is inflicted, antiseptic treatment is useless, even harmful. Such wounds should be treated in an open manner and the life of the patient will be saved if the infection has remained localized.

Injection Treatment of Varicose Veins.—Schwarz and Ratschow are ardent advocates of the treatment of varicose veins by means of sclerosing injections because of its simplicity, greater safety over surgical intervention and easy performance, to say nothing of the patient's attitude toward it.

Experiments in Bone Transplantation.—Kartaschew insists on the importance of the periosteum and the endosteum in successful transplantation of bone. These membranes allow the surrounding cells to get a good hold and thus further regeneration of tissue. Eventually the transplanted bone goes to pieces and is absorbed, new bone taking its place. As an adequate blood circulation is most essential in new bone growth, it is more advantageous to transplant small pieces of bone, shavings or splinters, than a single large piece. When this is done, the endosteum and the marrow are of more importance for good regeneration than the periosteum, although all three play a part in the process. Likewise, the cells in the haversian canals can play a part because they have opportunity to become vascularized by contact with the surrounding soft tissues. The author believes that metaplastic bone growth from the surrounding soft nonbony tissues also occurs, although not in nearly so high a degree as from bone cells themselves. The transplanted bone is not capable of forming bone from the surrounding soft tissues nor of converting fibroblasts into osteoblasts. But the author emphasizes most the advantage of transplanting small bone fragments rather than large segments of bone for the reasons stated.

Deutsche medizinische Wochenschrift, Berlin

56: 127-168 (Jan. 24) 1930. Partial Index

*Observations on Course of Tuberculosis Among Natives of the Interior of East Africa. F. K. Kleine.—p. 130.
*Tests for Detection of Hypersusceptibility to Eczema: Significance for Industrial Medicine. Bettmann.—p. 131.
Puerperal Pyemia and Sepsis. U. Friedemann.—p. 135.
*Early Ligation of Veins in Puerperal Pyemia. K. Sommer.—p. 136.
Remarks to the Two Preceding Articles. M. Martens.—p. 138.
Specificity of Ehrlich's Aldehyde Test in Urine. R. Goldschmidt.—p. 140.

Course of Tuberculosis Among Natives of the Interior of East Africa.—Kleine observed that the natives of the interior of East Africa usually do not become infected with tuberculosis during childhood. They contract the disease when in later life they desert their villages and seek employment on the coast, in the cities or in plantations. Generally the disease does not take a fatal course. When those that become infected are nourished properly and return to their villages, they usually recover. An epidemic of tuberculosis among the natives is not to be feared. The dissemination is gradual.

Detection of Hypersusceptibility to Eczema: Significance for Industrial Medicine.—Bettmann points out that some authorities have advocated that, in industries where the employees work with substances that may cause eczema, the susceptibility of the workers to these substances should be tested. In case of a positive reaction, either the worker should be advised to seek other employment or desensitization should be attempted. The author shows that the tests for the detection of hypersusceptibility are still in the experimental stage. He advocates further investigations of this problem. The proportion of the number of persons who actually develop eczema to the number of persons who give a positive reaction in hypersusceptibility tests should be determined. Tests for the detection of hypersusceptibility and desensitization treatments can be considered practical only if it has been proved on a large material that the majority of persons who give positive reactions develop eczema if they are not desensitized, and that those who give negative reactions remain free from eczema.

Early Ligation of Veins in Puerperal Pyemia.—Sommer evaluates the method for the treatment of puerperal pyemia which was recommended by Martens, namely, the early ligation of veins. Martens' theory that sepsis and pyemia are entirely different disease entities is not confirmed by the author. Observations in 244 cases of puerperal septic infections and 139 postmortem examinations have convinced him that sepsis and pyemia are frequently so interrelated that a clinical differentiation is not possible. He points out that the ligation of veins according to Martens' method is done at a time when the diagnosis of pyemia is not yet possible. Consequently, the operation is performed on patients who as yet do not have pyemia. According to Sommer, ligation of veins is of therapeutic value only in cases of "chronic" pyemia.

Klinische Wochenschrift, Berlin

9: 145-192 (Jan. 25) 1930

Relation Between Skin Diseases and Internal Secretions. A. Oswald.—p. 145. C'td.
Unrecognized Spontaneous Rupture of Uterus in Placenta Isthmica Partialis. R. T. von Jaschke.—p. 150.
*Treatment of Diabetes Insipidus by Means of Pernasal Administration of Several Preparations from Posterior Lobe of Hypophysis. M. Rosenberg.—p. 152.
*Effect of Carbon Dioxide Baths on Metabolism During Work. K. Hinsberg.—p. 156.
Experimental Thallium Poisoning. A. Seitz.—p. 157.
Malariotherapy: Studies on Immunity Against Recurrence of Infection. L. Horn and O. Kauders.—p. 164.
Is Vitamin D an Elementary Substance? G. von Wendt.—p. 166.
Simple Formula for Calculation of Body Height from Age of Child. J. Geldrich—p. 167.
Meinicke Clarification Reaction in Cerebrospinal Fluid. C. Riebeling.—p. 169.

Treatment of Diabetes Insipidus.—In discussing the therapy of diabetes insipidus with extracts from the posterior lobe of the hypophysis, Rosenberg mentions the disadvantages of the injection treatment. To eliminate the shortcomings of injection therapy, pernasal administration has been attempted during recent years. The author describes experiments with various extracts of the posterior lobe of the hypophysis. Liquid preparations were administered by means of saturated cotton plugs which were introduced into the nose. Other preparations were given in suppositories, and some in the form of snuff powders. The author comes to the conclusion that the best method for the treatment of diabetes insipidus is the pernasal administration of extract from the posterior lobe of the hyphophysis in the form of a snuff powder. Because the medicament has to be given for a longer period, and has to be resorbed by the nasal mucous membrane, the method is feasible only if disorders of the nasal cavity are entirely absent. The various preparations of the posterior lobe of the hypophysis differ somewhat in their composition. Consequently, if one is not effective a different one should be tried.

Effect of Carbon Dioxide Baths on Metabolism During Work—Hinsberg points out that patients with disturbances of the heart or of the circulation require for the same exertion a greater amount of oxygen than healthy persons. It is known that the carbon dioxide bath has a favorable influence on the general condition of patients with circulatory disturbances. Accordingly the author reasoned that if such patients were treated with carbon dioxide baths, they would, perhaps, consume less oxygen during work. He performed tests to investigate this problem. The patients performed a certain amount of work either forty-five minutes after a carbon dioxide bath or after they had received several such baths during a period of from eight to fourteen days. Then it was determined how much oxygen they required during the exertion. It was found that the carbon dioxide baths did not effect a decrease in the oxygen requirements. On the contrary, the oxygen consumption was increased. However, the metabolism during work does not have a direct influence on the basal metabolism. Tests revealed that the basal metabolic rate is not markedly influenced by carbon dioxide baths. The cause of the unfavorable influence of carbon dioxide baths on the metabolism during work has not yet been detected. It was observed that when digitalis was administered during the time when the patients received carbon dioxide baths, the metabolism during work was more favorable. The author emphasizes that the results of his experiments should not be considered as contraindicating carbon dioxide baths, because it has been proved that they have a favorable influence on the general condition of patients with circulatory disturbances.

Medizinische Klinik, Berlin

26: 77-112 (Jan. 17) 1930. Partial Index

Mode of Action in Combined Application of Irradiation and Isamine Blue in Treatment of Cancer. H. Cramer.—p. 79.
*Combined Isamine Blue and Radiation Therapy of Malignant Tumors. H. Bernhardt.—p. 83.
*Syphilis as Cause of Delayed Recovery from Injury. J. Urbach.—p. 86.
Obstinate Hiccup: Etiology, Mechanism and Surgical Therapy. A. Jirásek.—p. 89.
Operative Treatment in Chronic Appendicitis. B. Chatzkelson.—p. 92.

Combined Isamine Blue and Radiation Therapy of Malignant Tumors.—Bernhardt points out that the irradiation of malignant tumors has not fulfilled expectations. To better the results of radiation therapy it is not advisable to increase the intensity of the irradiation but rather to prepare the tissues for the action of the rays. For this purpose the author employed isamine blue. He describes the technic of its administration. Two hundred patients with malignant tumors were treated in this manner. Isamine blue has the advantage of being completely atoxic. With the aid of this dye it was possible to prepare for irradiation patients for whom otherwise irradiation was not advisable. The blue discoloration is unpleasant but in view of the severity of the disease and of the fact that the discoloration disappears again after several months, this disadvantage should be overlooked. The efficacy of the combination therapy differs in the various kinds of tumors. For patients for whom irradiation does not seem advisable, treatment with isamine blue alone is instituted. In these instances about 2 Gm. of the dye should be administered. For the combination therapy, however, from 1 to 1.2 Gm. of isamine blue is sufficient. When the injection of isamine blue is not followed by irradiation, after-treatment with lead and bismuth is advisable.

Syphilis as Cause of Delayed Recovery from Injury.—Urbach reports the case of a patient in whom, following a severe crushing of the leg, two gummas developed in the injured area. At first they were refractory to treatment. Later antisyphilitic therapy was instituted and this led to recovery. The author points out that the contusion alone could not have caused the delayed recovery, but the tertiary syphilis, from which the patient was suffering, caused the development of the gummas, which yielded only to antisyphilitic therapy.

Münchener medizinische Wochenschrift, Munich

77: 89-132 (Jan. 17) 1930

*Prognosis and Therapy in Arthropathia Ovaripriva. H. J. Lauber and C. Ramm.—p. 89.
*Endocrine Forms of Arthropathy. G. Riebold.—p. 90.
Incidence of Pain in Spondylitis Deformans and in Arthritis Deformans. A. Schanz.—p. 94.
*Experiences with Radiation Therapy in Exophthalmic Goiter. W. Brednow.—p. 96.
*Cancer of Uterus: Frequency and Etiology. A. Pfleiderer.—p. 97.
Observations on Cutaneous Esophylaxis. L. Veilchenblau.—p. 98.
Syndrome of Banti's Disease in Congenital Syphilis. A. D. Troitzkaja.—p. 99.
Habitual Swallowing of Foreign Bodies: Case. A. Fuchs.—p. 101.
Ignipuncture in Detachment of Retina. R. Deutschmann.—p. 102.
Treatment of Acute and Chronic Tonsillitis by Means of Cauterization or Irradiation with Concentrated Sun Rays. J. Ben Raanan.—p. 102.
Principles in Evaluation of Mechanical Breast Pumps. A. Hamm.—p. 103.

Prognosis and Therapy in Arthropathia Ovaripriva.—Lauber and Ramm point out that investigations during recent years have revealed that many forms of arthropathy are caused by endocrine disturbances. In women, diseases of the joints are most frequent during the menopause. It is probable that these forms of arthritis are due to dysfunction of the ovaries. This is indicated by the fact not only that they develop during the menopause but that they have also been observed in cases of extirpation of the ovaries. The authors designate this form of arthritis as arthropathia ovaripriva. The disease affects the joints of the fingers, the carpometacarpal joints and occasionally also the knee joints. It begins with a tingling sensation which is followed by a drawing pain. It is assumed that these manifestations are due to vascular spasms. They become more severe after exposure to cold. The affected joints appear enlarged and are highly painful. There is a limitation of active and passive movements. Signs of acute inflammation are not evident. Palpation reveals an enlargement which is probably due to a swelling of the joint capsule. The authors reasoned that, because dysfunction of the ovaries is an etiologic factor in this form of arthritis, the causal therapy should provide a substitute for this deficiency in the form of ovarian preparations. Administration of ovarian extracts and of potassium iodide in combination with baths and with the application of heat brought good results in six women in whom the disease was not yet complicated by arthritis deformans. Improvement

was noted after from three to six weeks, but complete recovery required from six to twelve weeks. In four of these patients relapses occurred, but they could be counteracted by renewed medication with ovarian extracts. The authors employed the substitution therapy likewise in three cases of chronic arthropathia ovaripriva. In these women symptoms of arthritis deformans were present and besides medication with ovarian extracts the regular arthritis deformans therapy was instituted. The patients showed improvement, but they did not recover completely.

Endocrine Forms of Arthropathy.—Riebold shows that some diseases of the joints are caused by endocrine disturbances. The most common forms are those that develop at the time of the menopause, when the functioning of the ovaries decreases. These arthritic disorders generally affect the larger joints, especially the knee joints. In many instances they may be influenced by thyroid preparations, which indicates that a hypofunctioning of the thyroid is likewise involved. There is a second group of diseases of the joints that are caused by endocrine disturbances. These develop in young women, but they are much less frequent than those that occur during the menopause. The joints of the fingers and of the toes are usually affected, but if the disturbance is of a prolonged duration all other joints become involved. This form of arthritis is generally accompanied by disturbances in menstruation. In some instances ovarian preparations exert a therapeutic influence, which indicates that disturbances in the functioning of the ovaries are etiologic factors.

Experiences with Radiation Therapy in Exophthalmic Goiter.—Brednow gives a summary report of thirty-six cases of exophthalmic goiter in which roentgen therapy was carried out during the past year. Only those cases were selected for irradiation which showed the symptoms of true thyrotoxicosis. The decisive factors in determining the advisability of roentgen irradiation were the clinical aspects and particularly the increase in the basal metabolism. The author gives a detailed description of the technic of the treatment. In tabular reports he shows the ages of the patients and their weights and basal metabolic rates before and after treatment. Eight persons recovered completely, that is, their basal metabolism was either normal or not more than 10 per cent above normal, their weight had increased, and their vasomotor disturbances had disappeared. All of the persons with one exception were less than 30 years of age. In nineteen patients improvement was noted. In the remaining nine cases the treatment was not effective; however, the majority of the patients were aged more than 50 years and some more than 60 years.

Cancer of Uterus: Frequency and Etiology.—Pfleiderer asserts that in Germany the incidence of cancer of the uterus decreased considerably during the years from 1917 to 1924, whereas statistics from other countries do not show such a decrease during that period. A congenital predisposition is of some significance in the pathogenesis of carcinoma. However, disturbances in the tissues are probably the ultimate cause of cancer. Since the percentage of the congenital predisposition to carcinoma remains more or less the same, the author reasons that the fluctuations in the frequency of cancer must be due to conditions in the tissues. The local conditions in the genitalia are likewise not changed because the functional activities such as menstruation and birth are about the same. Therefore the decreased incidence of cancer of the uterus must be caused by changes in the entire organism. The author points out that Germany's food supply was greatly limited in the period during which the decrease in the incidence of cancer of the uterus was most pronounced. From this the author concludes that nutrition is of some significance in the pathogenesis of cancer.

Wiener klinische Wochenschrift, Vienna

43: 97-128 (Jan. 23) 1930. Partial Index

Postvaccinal Encephalitis. W. Knöpfelmacher.—p. 97.
*Etiologic Factors in Postvaccinal Encephalitis. O. Reisch.—p. 103.
Significance of Nitrogen Monoxide Anesthesia in Modern Surgery. E. Domanig.—p. 105.
*Dermoid Cyst of Pineal Body: Case. F. Altmann.—p. 108.
Problems of Constitutional Pathology in Surgery. L. Moszkowicz.—p. 111.
Modern Obstetrics. H. Heidler.—p. 115.

Etiologic Factors in Postvaccinal Encephalitis.—Reisch reports that following the vaccination of 233 children, aged between 5 and 10 years, several cases with encephalitic symptoms were observed. Two were especially severe and ended fatally. The necropsy revealed the changes characteristic of encephalomyelitis. Six other children also developed encephalitic symptoms from six to twelve days after the vaccination. Neurologic examinations were now performed on all other children who had been vaccinated, on children and adults who at the time were ill with some infectious disease, and on healthy children who had been vaccinated in former years. The typical myoclonic symptoms were found in a larger number of children, not only in those who had been vaccinated but also in some who had not been vaccinated, the percentage being about the same in the two groups. Concerning the pathogenesis of these disturbances the author assumes that the vaccination was performed during the time when there was an epidemic of a disease of the central nervous system. This disturbance became manifest mainly in myoclonic symptoms and it was noted that it affected both vaccinated and non-vaccinated children.

Dermoid Cyst of Pineal Body: Case.—Altmann describes the case of a boy, aged 11, who during recent months had suffered from severe headaches, had become forgetful, and had had frequent attacks of vomiting and impaired vision. He also gained considerably in weight, and his walk became staggering. Following a thorough examination and roentgenoscopy of the brain the case was diagnosed as internal hydrocephalus and a calcified tumor of the pineal body. The cerebral symptoms gradually became more severe and the boy died. The author gives a detailed report of the results of the necropsy. Histologic examination of the pineal tumor revealed it to be a dermoid. The outer layer consisted of connective tissue. Then followed several layers of pavement epithelium, horny layers and connective tissue. A nodule within the growth contained a corium-like layer with short hairs and small sebaceous glands. Fatty and osseous tissues and hyaline cartilage were also noted. The internal hydrocephalus was probably caused by pressure on the cerebral aqueduct.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

96: 451-651 (Dec. 27) 1929

*Depth of Respiration in Pregnancy. W. Haupt.—p. 457.
Number of Uterine Contractions That Lead to Spontaneous Childbirth in Primiparas with Premature Rupture of the Membranes. E. Frey and A. Fehr.—p. 468.
*Duration of Postpartum Circulation in Blood Vesscls of Umbilical Cord. G. Haselhorst.—p. 487.
*Pregnancy: Deficient Physiologic Decrease of Fat in Pelvis. H. Sellheim. —p. 500.
Diagnostic Value of Microscopic Observation of Sedimentation of Blood. Kriele.—p. 507.
*Diagnostic Significance of Hormone of Anterior Lobe of Hypophysis in Urine in Cases of Hydatid Mole and Chorio-Epithelioma. H. Rössler. —p. 516.
Placenta Praevia: Treatment. H. Högler.—p. 539.
Malignant Adenoma of Cervix in Pregnancy in Third Month. H. Hinselmann.—p. 554.
Retrodisplacements of Uterus: Polano's Operation. P. Jonen.—p. 560.
Peculiarities of Female Constitution. E. Gläsmer.—p. 572.
Obstetric and Gynecologic Clinic at Basle. A. Labhardt.—p. 586.
New Roentgen Laboratory of Obstetric and Gynecologic Clinic of University of Berlin. G. K. F. Schultze.—p. 627.

Depth of Respiration in Pregnancy.—Using Krogh's apparatus Haupt determined the depth of respiration in twenty-seven gravidas on a low protein diet. His results confirm Klaften's observation that the depth of respiration increased during pregnancy. The depth of respiration with the patient in the sitting position is greater than it is with the patient in the recumbent position.

Duration of Postpartum Circulation in Blood Vessels of Umbilical Cord.—In a study of the postpartum circulation in the blood vessels of the umbilical cord in twenty childbirths, Haselhorst noted that the average increase in the weight of the infants after birth was 114 Gm. The duration of the increase in weight varied between two and twenty minutes. In cases in which the umbilical arteries pulsated for a long time, the author frequently noted a transient loss of weight.

Pregnancy: Deficient Physiologic Decrease of Fat in Pelvis. — Sellheim reports a case of deficient physiologic decrease of the pelvic fat in a primipara weighing 210 pounds (95 Kg.). The pelvic fat not only caused an insuperable dystocia but even rendered extremely difficult the extraction of the decerebrated cranium with a cranioclast.

Significance of Hormone of Hypophysis in Urine in Hydatid Mole and Chorio-Epithelioma.—In examinations of the urine in seven cases of hydatid mole, three cases of hydatid mole and chorio-epithelioma and three cases of chorio-epithelioma, Rössler noted that the amount of hormone of the anterior lobe of the hypophysis that was excreted in the urine was much greater than it was in cases of normal pregnancy. The difference was so marked that he believes that in these conditions the amount of the hormone in the urine is of value in making a prognosis and that further experiments with titration may lead to an exact differential diagnosis between hydatid mole and chorio-epithelioma.

Zeitschrift für Tuberkulose, Leipzig

55: 193-288 (Dec.) 1929

Combat Against Tuberculosis in German Universities. B. Kattentidt.—p. 193.
*Infraclavicular Infiltrate in Tuberculosis. K. Henius.—p. 215.
*Pulmonary Tuberculosis: Artificial Pneumothorax. F. Hoffschulte.—p. 220.
Conception of Compensation and Decompensation in Tuberculous Processes. D. Meerson.—p. 227.
Pulmonary Tuberculosis: Frequency of Various Blood Groups. H. Tiedemann.—p. 235.
*Alcohol and Mortality from Tuberculosis. R. Bandel.—p. 238.

Infraclavicular Infiltrate in Tuberculosis: Significance.—Henius warns against the present tendency to overestimate the importance of infraclavicular infiltrates. He believes that apical processes occur more frequently than is thought. Owing to the fact, however, that by the time the patient consults a physician the process has frequently extended to the infraclavicular portion of the lung, infraclavicular infiltrates are usually the first manifestation of tuberculosis of the lung and as such are given undue consideration.

Pulmonary Tuberculosis: Artificial Pneumothorax. — Hoffschulte describes his experiences in eighty-two patients with pulmonary tuberculosis treated with artificial pneumothorax. It was possible to maintain the pneumothorax for less than six months in 45.1 per cent of the cases, for six months and longer in 54.8 per cent and for twelve months and longer in 36.5 per cent. Clinical cures were observed in 5.4 per cent of the first group, 37.7 per cent of the second group and 43.2 per cent of the third group. The sputum was rendered negative in 18.9 per cent of the first group, 71 per cent of the second group and 69.9 per cent of the third group.

Alcohol and Mortality from Tuberculosis.—In a statistical study Bandel found that during the Great War there occurred in Europe an increase in the mortality from tuberculosis, caused largely by the scarcity of food. To this harmful influence were subjected persons of both sexes, the men no less than the women. In men from 40 to 70 years of age in Bavaria, however, the harmful influence of the scarcity of food was so much less than the beneficial effect of the scarcity of alcohol that the mortality from tuberculosis was greatly lowered. The author believes that in times when the consumption of alcohol is not limited, a large percentage of the fatal cases of tuberculosis are caused by alcoholism.

Zeitschrift für Urologie, Leipzig

23: 993-1118, 1929

*Large Calculus of Urethra. A. J. Abramian.—p. 993.
Dystopia of Kidney. W. Weber.—p. 996.
Treatment of Strictures in Vesical End of Ureter. B. Vormann.—p. 997.
Treatment of Stricture in Lower Portion of Ureter. M. Zondek.—p. 1000.
Compression of Ureter by Accessory Artery from Aorta. M. Levi.—p. 1000.
*Decapsulation of Kidney in Hematuria. Warner.—p. 1001.
Primary Cancer of Ureter. Dzialoszynski.—p. 1004.
Roentgen Diagnosis of Nonsuppurative Perinephritis. O. A. Schwarz.—p. 1007.
Lithotripsy and Evacuation Under Visual Control. L. Zeiss.—p. 1013.
Tumors of Kidney: Roentgenograms and Specimens. H. Feilchenfeld.—p. 1019.
Id.: Roentgenogram and Specimen. L. Zeiss.—p. 1023.
Stricture of Ureter. S. Perlmann.—p. 1026.
Pelvic Kidney: Clinical Aspect and Surgical Treatment. J. Bitschai.—p. 1035.
Para-Ureteral Kidney Calculus. J. Bitschai.—p. 1042.
Roentgen Picture in Late Tuberculosis of Kidney. A. Mosenthal.—p. 1046.
Review of German Urologic Literature for 1927. S. Perlmann, H. von Sauer and E. Joseph.—p. 1047.

Large Calculus of Urethra.—Abramian reports a case of large calculus of the urethra in a man, aged 54. The calculus-forming process had begun in childhood. When the patient was 4 years of age a urethral calculus had been removed through a perineal incision. By the time he was 22 years of age he had undergone three more operations for urethral calculi. During the ten years after the last operation he passed five urethral calculi spontaneously. Symptoms of another calculus had begun nine years previously and had become so marked that the patient was unable to do any work necessitating bending of the body. At operation a white, smooth calculus 8.5 cm. long, 1.5 cm. thick and weighing 18.7 Gm. was removed. Chemical examination revealed that it was composed of phosphates.

Decapsulation of Kidney in Hematuria.—Warner reports a case of unilateral hemorrhagic nephritis in which all attempts to stop the hematuria by conservative methods were unsuccessful. Therefore decapsulation of the diseased kidney was performed. On the afternoon of the day on which the operation was performed, the patient voided blood-free urine. Several other specimens of urine were examined but erythrocytes were not found.

Zentralblatt für Chirurgie, Leipzig

57: 1-64 (Jan. 4) 1930

Endometriosis of Urinary Bladder (Adenomyosis). F. Oehlecker.—p. 2.
*Plastic Rib Surgery with Paraffin Plugging. F. Krampf.—p. 10.
Modification of Technic of Surgical Suture: New Instrument. M. Borchardt.—p. 11.
Diagnosis of Nongonorrheal Epididymitis. E. Seifert.—p. 13.
*Modification of Rammstedt Operation for Pylorospasm in Infants. B. Heile.—p. 19.
Diffuse Purulent Posttraumatic Peritonitis Without Visible Injury of Intestine. A. Genachow.—p. 25.
Resection of Stomach for Postoperative Peptic Ulcer. F. de Gironcoli.—p. 25.
Needle Holder for Round Needles. R. Gartenmeister.—p. 27.
New Gastric Clamp: Parallel Arms. P. Kleinschmidt.—p. 29.
*Suphrenic Appendicitis. K. Werwath.—p. 29.
Ileus and Subphrenic Abscess. H. Meyer.—p. 31.

Plastic Closure After Rib Resection.—Krampf has made use of a procedure which has yielded better results than have been obtained heretofore. The rib to be resected is exposed. The intercostal muscles are carefully freed from the rib and its periosteum. Then an area of 3 or 4 cm. is resected by obliquely made cuts, their direction being from without inward. The cavity is filled with paraffin and immediately the resected piece of rib with its periosteum is replaced in its bed and sutured in place with heavy silk or wire sutures passed through three drill holes previously made in each contacting rib surface. Thus the extrusion of the paraffin through the costal wall is prevented.

Operation for Pyloric Stenosis in Infants.—Heile prefers the Rammstedt operation to all others. He has performed it in ninety-three cases with only three deaths. These occurred solely because the patients were brought for operation too late. He has modified the operation by freeing the tumor mass encircling the pylorus throughout its entire extent. The duration of the operation is lengthened by not more than three or four minutes; thus, the life of the child is not endangered.

Subphrenic Appendicitis. — Werwath reports what he asserts to be the first case of primary subphrenic appendiceal abscess resulting from the abnormal position of the entire cecum, ascending colon and hepatic flexure between the diaphragm and the liver. The entire mass had become adherent to the liver. The appendix was gangrenous and perforated at its tip. The cecum was phlegmonous. The position of the bowel was due to embryologic maldevelopment.

57: 65-128 (Jan. 11) 1930

*Failure of Resection of Gastric and Duodenal Ulcer to Achieve Desired Results. H. von Haberer.—p. 66.
Growth of Free Tibia Transplant: Treatment of Scoliosis. F. Schede.—p. 76.
*Suprapubic Lithotomy: Transperitoneal Section in Two Stages: Without Use of Indwelling Catheter. F. Schewket.—p. 77.
*Results of Ramisection in Spastic Conditions. M. Herz.—p. 78.
Transperitoneal Nephrectomy. P. Rathcke.—p. 80.
Rupture of Retroperitoneal Portion of Duodenum with Formation of Pancreatic Pseudocyst. I. Pedišić.—p. 82.
New Wound Retractor. P. Möhring.—p. 83.
Fixation of Bone Fragments with Schanz's Screws Maintained by Means of a Perforated Plate. G. Riedel.—p. 84.
*Strangulation: Ileus Caused by Acute Appendicitis and Fermentation (Toxic) Ileus. H. Hanke.—p. 86.
Cardiospasm: Dilation à la Mikulicz with Profuse Hemorrhage. J. Galpern.—p. 87.
Diseases of Mamma. W. Siemens.—p. 89.

Resection of Stomach for Peptic Ulcer.—Von Haberer relates his experiences with 2,310 cases of resection. He believes that the best results are obtained with the Billroth I operation plus an end-to-end anastomosis between the stomach and the duodenum. In only fifteen cases was the final result not good; that is, 0.6 per cent of the 2,310 cases.

Transperitoneal Laparotomy in Two Stages.—Bladder fistula often follows suprapubic lithotomy (20 per cent in Schewket's clinic). To avoid this happening, he resorts to a two stage laparotomy. The result has been wholly satisfactory. In these cases it is not necessary to use the permanent or indwelling catheter. The bladder is exposed under local anesthesia of the abdominal wall in the usual manner; that is, transperitonealized. The wall of the bladder is sutured to the edges of the incised peritoneum. Twenty-four hours later, under ether anesthesia, the stone is removed through a very small opening in the bladder wall. The wounds are sutured in the customary manner. A catheter is not inserted but the patient is urged to urinate every three hours.

Ramisection in Spastic Conditions a Failure.—Herz analyzes thirty-six cases in which ramisection was performed. In all but four of the cases Royle performed the operation. The author has not operated in this manner as he is doubtful of the value of the procedure. In fact, in the thirty-six cases reported here, the result was entirely negative. The ages of the patients varied between 5 and 48. The reasons for performing the operation were: cerebral diplegia, nineteen cases; parkinsonism after encephalitis, five cases; spastic paraplegia after a head trauma, three cases; spastic hemiplegia after apoplexy, two cases; spastic hemiplegia after birth trauma, two cases; Raynaud's disease, three cases; spastic paraplegia with multiple sclerosis and following fracture of a cervical vertebra, each one case.

Toxic Ileus.—In the case described by Hanke the patient had partaken freely of cherries and then drunk much water. The following day symptoms of toxic ileus and acute nephritis were manifested. Under medical treatment some improvement was noted, but finally on the fifth day laparotomy was performed. The appendix was found acutely inflamed and adherent to the root of the mesentery, which had caused an obstruction. The adhesions were freed; the appendix was removed and the patient made an uneventful recovery. The author is of the opinion that these two conditions were not related etiologically, but merely occurred simultaneously. However, the symptoms of the toxic ileus overshadowed those of the obstruction and the appendicitis for several days, so that the latter condition was not recognized immediately.

Hospitalstidende, Copenhagen

72: 1171-1212 (Dec. 5) 1929

Contribution to Nosology of Appendicitis. L. Kraft.—p. 1171.
*Correlation Between Blood Types and Insanity, Together with Significance of Determination of Blood Types in Inoculation Malaria. C. Hamburger.—p. 1188.
*Clinical Effect of Synthetic Thyroxin. S. A. Holbøll.—p. 1195.
*Congenital Luxation of Humerus. A. Wagner.—p. 1205.

Correlation Between Blood Types and Insanity.—The results of Hamburger's determination of blood types in 1,000 patients with mental disease gave no support for the assumption of any correlation between blood types and insanity. When in malaria therapy a short incubation period is desired, a determination of the blood type is advised, with a series of inoculations accordingly, to prevent agglutination of the donor's blood corpuscles in the recipient's plasma.

Clinical Effect of Thyroxin.—Holbøll obtained identical results in patients with adiposity treated with synthetic thyroxin introduced subcutaneously and with standard thyroid preparations. The effect of the thyroxin administered orally was far weaker, as a result, it is assumed, of defective resorption of this preparation by the alimentary canal.

Congenital Luxation of Humerus.—Roentgen examination in Wagner's patient, aged 48, with a tendency to luxation of the humerus, revealed changes in the joints as found in congenital luxation of the shoulder, but there was not and probably never had been luxation.

72: 1213-1254 (Dec. 12) 1929

*Diagnosis and Differential Diagnosis of Pernicious Anemia: Review. H. C. Gram.—p. 1213.
*Investigations on Sugar Content of Blood in Man After Intake of Proteins. K. Overgaard.—p. 1241.

Diagnosis and Differential Diagnosis of Pernicious Anemia: Review.—Gram describes pernicious anemia and the disorders with which pernicious anemia is most often confused. There are four and a half pages of bibliography.

Sugar Content of Blood After Intake of Proteins.—Overgaard concludes that there is not in well persons regularly a rise in the blood sugar level following the oral administration of proteins, and the condition seems to be somewhat similar in certain milder cases of diabetes.

Hygiea, Stockholm

92: 1-48 (Jan. 15) 1930

Interesting Medical Feud in Paris in 1840's. P. Haglund.—p. 1.
*Splenectomy from Point of View of Internal Medicine. G. Rystedt.—p. 21.

Splenectomy from Point of View of Internal Medicine.—On the basis of his own observations and those of others, Rystedt asserts that splenectomy has so far been followed by positive permanent results only in splenic anemia, essential thrombopenia and hemolytic jaundice, in certain cases of primary malignant tumor of the spleen, in benign tumors and cysts of the spleen and in chronic infections, especially tuberculosis, mainly localized in the spleen.

Ugeskrift for Læger, Copenhagen

92: 103-130 (Jan. 30) 1930

*Edema and Edema Formation. O. Jervell.—p. 103.
*By-Effects of Thyroid Treatment on Human Organism. S. A. Holbøll.—p. 109.
Electric Cauterization: Cases. J. Jessen.—p. 112.
Variation of Urinary Diastase Dependent on Concentration of Urine. G. Nørby.—p. 113.

Edema and Edema Formation.—Jervell says that a number of factors must be considered in explanation of edema formation. Among these the function of the capillaries is not the least important. Direct injury to the capillaries is not necessary, although probable in some cases. The so-called filtration edemas can be explained by increased hydrostatic pressure in the capillaries or by lowered colloid-osmotic pressure in the blood. Hydremia or increased intake of salt is an important factor when a tendency to edema already exists. The occurrence of edema of purely renal origin is doubtful, nor can edema formation be explained by changes in the tissues themselves. The water-binding ability of the tissue colloids cannot, however, be disregarded. Edema in various pathologic conditions is discussed.

By-Effects of Thyroid Treatment on Human Organism.—Holbøll found clinical signs of hyperthyroidism in ten of twenty-five patients with adiposity treated with a thyroid preparation. A rise in the pulse rate during treatment occurred in all; a considerable rise in blood pressure, in nine, and a fall in hemoglobin value, in four. A rise in the sedimentation reaction appeared in the ten patients with signs of hyperthyroidism, and only in these. Examination of the sedimentation reaction in patients with obesity during thyroid treatment is therefore believed to afford an indication of whether or not the treatment is well borne.